AMERICAN AGRICULTURIST

FOR THE

Farm, Garden, and Household.

"AGRICULTURE IS THE MOST HEALTHFUL, MOST USEFUL, AND MOST NOBLE EMPLOYMENT OF MAN."—WASHINGTON.

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BOBBING FOR EELS.—*Drawn and Engraved for the American Agriculturist.*

While the skilled angler looks with contempt upon such unsportsmanlike fishing as the catching of eels, many a boy, and man too, has found in it the means of procuring an excellent breakfast. However repulsive their snake-like form may be to some, none who have ever tasted them will deny that they are good eating. Eels are caught in "pots" or traps, by spearing them through the ice and by bobbing. To make a bob, a number of large earthworms are, by means of a large needle, strung upon worsted or silk thread; when a sufficient number are thus strung, they are folded up, making a "bob" or bunch like a tassel, as large as one's fist; in the center of the bob is tied a small lump of lead to serve as a sinker. The bob is tied to the end of a string five or six feet long, which is attached to a rod of suitable length, and a lighted lantern and basket complete the outfit. Bobbing is done at night; having selected the spot where he intends fishing, the bobber suspends the lantern over the water at the end of a stick, and casts in his bob; the eels are attracted by the light, and commence to feed on the worms. When the bobber thinks he has a good bite, he gives a violent but skillful jerk of the rod, and lands the eels upon the grass behind him. Bobbing is also practiced from boats, but it requires quite some skill to give just the proper jerk to drop the eels into the boat. Eels are very fond of birds, and the sportsmen often see their game which drops into the water disappear before they can reach it. A sporting friend of ours states that while shooting rail among the reeds of the Delaware river, he frequently lost birds in this manner, but he took the hint and made a bob of a dead bird by sewing it through and through with silk, and tied it the same as a bob, the result was highly satisfactory in the number of eels captured. The use of the silk here as in the bob, is to catch in the fine teeth of the eel.

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Calendar for August.

Day of Month.	Day of Week.	Boston, N'England, N. York State, Michigan, Wisconsin, Iowa, and Oregon. Sun rises.	Sun sets.	Mo'n sets.	N. Y. City, Ct., Philadelphia, New Jersey, Penn., Ohio, Indiana, and Illinois. Sun rises.	Sun sets.	Mo'n sets.	Washington, Maryland, Virginia, Kentucky, Missouri, and California. Sun rises.	Sun sets.	Mo'n sets.
		H. M	H. M	H. M.	H. M	H. M	H. M.	H. M	H. M	H. M.
1	S	4 52	7 20	sets	4 56	7 16	sets	5 0	7 12	sets.
2	M	4 53	7 19	8 22	4 57	7 15	8 20	5 1	7 11	8 16
3	T	4 54	7 18	8 47	4 58	7 14	8 45	5 1	7 10	8 43
4	W	4 55	7 16	9 8	4 59	7 12	9 7	5 2	7 9	9 7
5	T	4 56	7 15	9 27	5 0	7 11	9 28	5 3	7 8	9 28
6	F	4 57	7 14	9 44	5 1	7 10	9 46	5 4	7 7	9 48
7	S	4 58	7 13	10 7	5 2	7 9	10 10	5 5	7 6	10 13
8	S	4 59	7 11	10 30	5 3	7 7	10 34	5 6	7 4	10 39
9	M	5 0	7 10	10 57	5 4	7 6	11 03	5 7	7 3	11 9
10	T	5 1	7 9	11 28	5 5	7 5	11 35	5 8	7 2	11 42
11	W	5 2	7 8	morn	5 6	7 4	morn	5 9	7 0	morn
12	T	5 3	7 7	0 10	5 7	7 3	0 18	5 10	6 59	0 26
13	F	5 4	7 5	1 2	5 8	7 1	1 9	5 11	6 58	1 17
14	S	5 5	7 4	1 59	5 9	7 0	2 6	5 12	6 57	2 13
15	S	5 6	7 2	3 11	5 10	6 58	3 17	5 13	6 55	3 23
16	M	5 7	7 0	rises	5 11	6 56	rises	5 14	6 53	rises
17	T	5 8	6 59	7 35	5 12	6 55	7 33	5 15	6 52	7 30
18	W	5 9	6 57	7 57	5 13	6 53	7 56	5 16	6 50	7 55
19	T	5 10	6 55	8 18	5 14	6 52	8 18	5 17	6 49	8 19
20	F	5 11	6 54	8 40	5 15	6 51	8 42	5 18	6 48	8 44
21	S	5 12	6 52	9 16	5 16	6 49	9 19	5 19	6 46	9 22
22	S	5 14	6 51	9 36	5 17	6 48	9 40	5 20	6 45	9 43
23	M	5 15	6 50	10 11	5 18	6 47	10 17	5 21	6 44	10 23
24	T	5 16	6 48	10 57	5 19	6 45	11 4	5 21	6 42	11 11
25	W	5 17	6 47	11 55	5 20	6 44	morn	5 22	6 41	morn
26	T	5 18	6 45	morn	5 21	6 42	0 2	5 23	6 40	0 10
27	F	5 19	6 44	1 1	5 22	6 41	1 8	5 24	6 38	1 14
28	S	5 20	6 42	2 18	5 23	6 39	2 24	5 25	6 37	2 30
29	S	5 21	6 40	3 32	5 24	6 38	3 37	5 26	6 36	3 41
30	M	5 22	6 39	sets.	5 25	6 36	sets	5 27	6 34	sets
31	T	5 23	6 37	7 11	5 26	6 35	7 10	5 28	6 33	7 9

PHASES OF THE MOON.

MOON.	BOSTON.	N. YORK.	WASH'N.	CHA'STON	CHICAGO.
	D. H. M.	H. M.	H. M.	H. M.	H. M.
New M'n	1 8 44 mo.	8 32 mo.	8 20 mo	8 8 mo	7 58 mo.
1st Quart	8 10 46 ev.	10 33 ev.	10 22 ev.	10 10 ev.	9 40 ev.
Full M'n	16 8 50 ev.	8 37 ev.	8 26 ev.	8 14 ev.	7 44 ev.
3d Quart.	23 8 55 ev.	8 42 ev.	8 31 ev.	8 19 ev.	7 49 ev.
New M'n	30 6 57 ev.	6 44 ev.	6 33 ev.	6 21 ev.	5 51 ev.

AMERICAN AGRICULTURIST.

NEW YORK, AUGUST, 1875.

The gloomy forebodings which were called forth by an unpropitious spring, have been fulfilled only in part. In many places where the destruction of the crops was feared, an abundant harvest has been gathered. The locust and the chinch bug have happily failed to do any serious damage, and where last year there was poverty and suffering, this season there is abundance and comfort. So the wheat-fields which were all but destroyed by the winter's frosts revived under the influence of favorable summer weather, and while the crop is short, yet it will doubtless produce as much in money as if it were larger. The prospects of the markets are not easy to prognosticate. At any rate, there is but little probability of any material advance, while on the other hand, farmers will not submit to any reduction of prices, and need not force their grain on an unfavorable market. However, business everywhere is gradually resuming a healthy character. In this there is a good promise for returning prosperity to the farmer who, now that his year's labors are nearly finished, may cheerfully and gratefully take rest and recreation, knowing that things are not so bad as were expected.

Hints about Work.

Weeds.—It is proper to commence this chapter of hints with weeds. In our walks over farms in different localities, we see weeds are everywhere, in the corn-fields, amongst the potatoes, in the stubbles and the young clover, and with ripe, or rapidly ripening seeds. Some good farmers keep them out of their crops, but around the fences and in odd corners there are thrifty patches full of seed. At a gathering of farmers last month, some of them complained to us that the weeds were ruining their farms. In the very field where we stood, *a summer-fallow* too!—the weeds were in full bloom, and if mowed, would have made a ton to the acre. Ox-eye daisy, snap-dragon, wild radish, thistles, rag weed, pig weed, amaranths, and a score of such common, but pestiferous plants, covered the field so that the plow could not wholly bury them. When this summer-fallow was plowed, the field was seeded for a whole lifetime. Twenty years' labor cannot wholly clear it, and yet the man who owned the farm complained that the weeds were ruining him. There is one remedy for weeds, which is thoroughly effective, and that is cutting them wherever found in odd places, before they blossom, and clean cultivation in the fields.

Insects.—It is the same with insects as with weeds, beetles, bugs, catterpillars, and insects of all sorts in all their forms. There must be constant warfare against them, and they must be killed by every means in our power. But a farmer must keep his eyes open, or he will fail to see the enemy until too late. The tent catterpillars sometimes clear every leaf from an orchard before the owner notices their unsightly nests upon the trees. Study the habits of these pests, and look out for them. Search the former volumes of the *Agriculturist* for information about them, and follow directions. Insects and weeds rob farmers of half their profits, half their rest, and double their work. United and constant efforts are needed to get rid of them, but after every year of effort, the work will be lighter.

Thrashing.—Grain in the granary is safe if the granary is a secure one. With such a building as was described in the *Agriculturist* for June last, the grain will keep safely and without loss, until sold. Thrash as soon as possible, whether the grain be sold or not. Some think it will pay to hold grain another year. That may be well for those who can afford it, but if one is in debt and borrowing money to hold grain, it is well to think twice and count up the cost in interest. To pay interest on a debt and lose interest on money in bank, or idle, (and grain is money), is simply paying double interest.

The oat stubble should be plowed as soon as the crop is harvested, so as to start the shelled grain into growth. No more plowing is needed. Keep the surface cultivated or harrowed. This will kill thousands of weeds from newly dropped seeds. The pulverizing cultivator made by Gifford Johnson & Co., Hudson, N. Y., is a good implement for this purpose, and may be set to cut one, two, or three inches in depth, as may be desired. It will also cover the seed handsomely and better than a harrow. By keeping the surface mellow, the bottom is kept from becoming too dry and hard.

Lime.—If lime is to be spread upon an oat stubble which is to be sown to wheat next month, and clover in the spring, it should not be drawn from the kiln until the ground is plowed, when it can be dropped at once on the field in heaps of one bushel two rods apart each way. This will give exactly 40 bushels per acre, which is a very fair dressing. The first shower will slake the lime and cause it to fall into a fine powder, when it may be spread evenly in a square, one rod each way from the heap, with a long-handled shovel. This is by far the easiest way of handling lime.

Old Pastures may be renewed this month by cutting off the brush, bushes, etc., a little below the surface, burning them and spreading the ashes. Then go over the groand with a heavy sharp-toothed harrow, and tear up the surface, spread some lime and top-dress with the scrapings of the stables and yards, sow some fresh seed and roll. A mixture of six pounds of timothy, four pounds of Kentucky blue grass, and four pounds each of red and white clover, may be used.

Stacks of grain or hay should be well topped off or thatched, the fodder saved will pay the cost.

Root Crops will need thinning severely. Every supernumerary plant is really a weed, and should be pulled out with other weeds. Twelve inches apart is near enough for ruta bagas and turnips.

Fall Plowing.—Clover sod for wheat should be turned perfectly flat and rolled to compact the sod. Six inches is deep enough for the plowing. Either a Shares' or a Nishwitz harrow is a good implement to work the surface before the seed is drilled in. The sod should not be cross-plowed, but the soil worked fine with the cultivator or harrow.

White Turnips will make a good crop on an oat-stubble if sown early this month; 200 lbs. of guano per acre will make a good and active fertilizer for these roots. To get an even crop, halve both the seed and manure, and sow broadcast both ways; cover with a bush-harrow or roller.

Working Cattle.—Horses and oxen should have

long rests at noon, and at night, after having been well fed, be turned into a pasture to rest. They should be brought in early in the morning and fed and curried. This will greatly refresh them.

Cows.—The milk will now fall off greatly unless fresh green feed is furnished to the cows. Thinnings from the root crops or the corn-fields will still yield a good feed every night for a week or two. But it is best to have a piece of fodder corn especially planted for this purpose. If nothing else can be given them, a pailful of bran slops for each one will be of great service. Cows that are once allowed to shrink in their milk, will fall into a habit of doing it always.

Sheep.—Late lambs should now be weaned. The ewes should be closely watched and milked dry every second evening, if necessary, until quite dried off. Rams should be separated from the ewes except those from which lambs in January are wanted. Where there is every facility for taking care of and disposing of such early lambs, they are by far the most profitable. Commence to feed rams for their fall work. If a thoroughbred ram is to be purchased, do it at once while there is a good choice.

Swine.—Pigs or hogs to be fattened should be put up now. They will make more growth in a month now than in two months by and by. Give them plenty of pure water and dry, clean pens. Sows bred on the first of August will farrow in sixteen weeks, or about the 1st of December. With warm, good pens, pigs may then be raised without trouble, making good porkers in the spring. If pigs are not wanted, then they should not come until March, and the boar should be shut up in the meantime.

Selecting Seed.—As it is by selecting seed and carefully preparing and planting a portion of the ground specially for the growth of seed, that improvements in farm crops are made, it would be well not only to select seed wheat for the fall sowing with care, and to free it from seeds of weeds even by hand-picking if necessary, but to prepare and sow a portion of the field with more than usual care for the production of seed for next year's crop. Much may be done in this way to improve the crops, and instead of farmers paying high prices for seed to persons who will take this care, they should do it for themselves and save this tax.

Sundry Matters.—Insurances that have lapsed should be renewed, and where there is none it should be secured without delay. Insurance is a tax for safety that no person should grudge to pay. All those machines and tools that are now out of use should be cleaned and put away in a safe place. Any oily rags used in cleaning should be carefully burned; if thrown in a corner carelessly, they may take fire spontaneously and destroy much property. Now is a good time to weed out the stock, to get rid of unprofitable animals and procure better ones. There should be a constant effort to increase the value of live-stock by procuring thoroughbred males, choosing the best females to breed from, and selecting the best of the produce for stock.

Work in the Horticultural Departments.

If the work has been properly forwarded, there will be a little breathing spell in this month of comparative leisure. The boys and hired men should have a vacation, either a day or two of fishing, a visit to the seashore, a trip to the mountains, or whatever in the way of recreation the vicinity affords; they will come home refreshed and ready for the fall work. When boys are kept hard at work day after day, they become listless and careless about their work, and their only thought is to get into the city as soon as they are of age. A little recreation cheerfully offered now and then, will help greatly to make them contented. There are yet many little odds and ends which need to be looked after, and for which time can be better spared now than later. Draining in the orchards or elsewhere, may be done at this season, and as labor in the vicinity of large towns is cheap, it will, if one has the means, be a paying investment to do it. Do not allow the docks and other weeds to run to seed, and provide labor for the next season. This month is a good one in which to put up or repair any buildings needed upon the place.

Orchard and Nursery.

Drouths are likely to tell upon newly planted trees this month, and particularly upon those which were improperly taken up, and had poor roots. A mulch even at this late date, may save many which would perish without it.

Web-worms are often found in abundance upon fruit trees at this time; if they are upon small twigs, cut these off and burn; when they infest large limbs, they must be removed with the hand.

Insects.—Large quantities of immature fruit are often found under the trees; this is the work of insects; allow the pigs the run of the orchard, or have the fruit picked up and the insects destroyed, to prevent a crop for the coming year.

Bud whenever the bark is loose enough to lift readily, and when well-ripened buds can be had. Keep the sticks of buds moist until used.

Marketing.—In order to get good prices for fruits, they must be carefully assorted and handled, as upon this depends the profit or loss of the business. Every parcel of fruit should be so packed that there will be no danger of bruising in transportation; the quality should be the same throughout, that buyers may rely upon the grower's brand.

Weeds.—Do not allow any to go to seed if the orchards are cultivated; if the ground is simply kept plowed, and no crop raised, the harrow may be used every week or ten days; this will keep the soil loose and clear of weeds.

Old Trees.—Around most places which have been long settled, are to be found old trees, which occupy a large spot of valuable ground, producing only indifferent fruit, and are too poor to renew by grafting; these had better be converted into fire-wood, and plant better trees next fall.

Fence Rows around orchards as well as vegetable gardens, are often infested with poison-ivy and other woody weeds, which soon encroach upon the grounds if not destroyed. The best plan for killing all such, is to take the fence up altogether, where practicable, and after mowing the tops off and burning, plow deeply; this will soon destroy them if followed up persistently.

Fruit Garden.

Raspberries.—Cut off the old fruit canes, and manure with well rotted manure. Keep the new canes tied to stakes or trellises to prevent their being broken by the wind.

Blackberries.—Cut out all but three or four canes of the new growth, and tie to stakes. Do not pick the fruit until it is thoroughly ripe, if for home use; if for market, it must be gathered while yet firm, else there will be danger of bruising.

Grapes.—As soon as any signs of mildew appear, apply sulphur to the vines. Tie up the new canes to the trellises with soft cotton twine.

Fruit.—All surplus fruit not needed for family use or market, may be canned or dried for winter. It often happens that there is a glut of some particular fruit, and it will not pay to send it to market; but it can be preserved by canning or drying.

Dwarf Trees.—Remove all deformed fruit, and if the trees are too full, make a final thinning, so that they may not over-bear.

Currants and Gooseberries.—As soon as these have done bearing, give a good dressing of manure, and keep the weeds down by cultivation.

Kitchen Garden.

In a well ordered garden at this season, there should be an abundance of vegetables of the best quality. The early varieties such as peas, asparagus, and the like, will be succeeded by squashes, beans, tomatoes, corn, and various others.

Asparagus must not be neglected and allowed to go to weeds, even though it has ceased to yield a return; it is storing up nourishment for a strong growth the coming season, and in order to do this, it must have had food in the shape of manure, and now it must not be robbed by weeds.

Beans.—It is not yet too late to plant these for late snaps. Keep the pole sorts hoed and weeded, and when they reach the tops of their poles, pinch off, to induce the growth of the pods and beans. The Limas may need a little assistance in attaching themselves to the poles, and for this use bass matting, taking care not to tie too tight.

Cabbages and Cauliflowers must be hoed often, to give a rapid growth; this is especially beneficial in the morning when the dew is on the plants; use liquid manure judiciously and greatly diluted.

Carrots.—Use the hoe and cultivator between the rows until the tops cover the ground; large weeds which appear in the rows, must be hand-pulled. Remove all plants which throw up a flower-stalk.

Celery may yet be set out for a late crop.

Corn which has yielded its crop of ears, may be cut and given to the cows, and the ground planted with turnips or late cabbages. Cut off all smutty parts and burn them.

Cucumbers.—Cut every day for pickles, choosing those not more than two or three inches long.

Egg Plants.—The warm weather at this season will cause a vigorous growth, and if liquid manure is given, they will be benefitted by it. Place a handful of hay around the plants, to keep the fruit from contact with the ground.

Lettuce.—Sow a few seeds in a cool, shady spot, to give plants for setting next month.

Melons ought to be cultivated until the vines cover the ground and prevent; after this the weeds that appear may be hoed or hand pulled.

Onions may be harvested when the majority of the tops fall over. Pull and let them remain in the sun for a few days before storing. Store in a dry place where there is free circulation of air, otherwise they are liable to rot. Onion sets must be spread very thinly.

Spinach.—Sow for fall use now, and next month for winter.

Sweet Potatoes should be making a rapid growth at this season; the ridges must be kept hoed, and the vines lifted to prevent their taking root.

Tomatoes.—Tie up to trellises or place hay or brush around the plants to keep the fruit from the ground. Destroy the green worm when found.

Turnips—Sow all vacant spots where the crops have been taken off with turnips; they grow quickly and yield good returns; if the fly appears, dust the plants when wet with lime or plaster and ashes.

Weeds.—If weeds have been allowed to become large, they must be hoed and raked off, otherwise they soon take root again. Use all the labor-saving implements that can be afforded to kill the weeds; there are numerous good and effective sorts of hand cultivators and wheel hoes. Where the horse cultivator can be used, it should take the place of hand labor, as quicker and better, but as every garden has some spots where they cannot be used, hand ones must be used. For paths and drives, where it is not necessary to stir the soil deep, a push hoe is very effective and easier to handle than an ordinary hoe. The garden should be gone over with hand or horse cultivator every week during the growing season, to keep the weeds under.

Flower Garden and Lawn.

Lawns require mowing often to keep the turf smooth and prevent weeds from growing. Remove all perennial weeds by the use of a spud or sharp narrow spade. Roll after a rain to induce the formation of a close turf.

Edgings of grass around the walks and flower-beds must be cut often to keep the roots from spreading to the walks or beds.

Walks and Drives are liable to become weedy if not hoed and raked often. Remove the weeds after hoeing, and make the ground in the center higher than the edges; this will allow the rain to run off, leaving the middle dry and hard. Sprinkling and rolling during dry weather are important.

Dahlias.—Keep tied to stakes and give water during drouths. Pick off all deformed flower-buds.

Gladioluses, when planted among low shrubs, do not require stakes, and make a good show of flowers after the shrubs have done blooming.

Lilies.—Some of the taller sorts need stakes, as they are liable to be broken by high winds. The California species succeed best if planted permanently in a well drained place, where they can be covered during the winter with leaves. The surest method is to grow them in frames.

Shrubs.—There are many shrubs which can be easily grown from cuttings made from the new wood at this season. Weigelas, Forsythias, Lonicera, etc., all root readily. A frame sheltered from the sun is the best place in which to start them.

Bedding Plants set out in borders must be kept weeded and pruned into proper shape when necessary. During dry weather give water abundantly, if given at all.

Seedlings of perennials must be sown as soon as ripe, in boxes, and sheltered from the sun by screens of brush or lattice work. During damp and cloudy weather, many varieties can be set, and if shaded during the middle of the day, will grow well.

Greenhouse and Window Plants.

So much care is required by the plants out of doors, that those in the house and greenhouse are liable to be neglected. Do not let the plants become infested with insects, but fumigate and shower often. Look out for scale on ferns and other plants, and wash the more robust ones with whale oil soap, and remove with a soft sponge and sharp-pointed stick from the tenderer sorts. Give shading and water, and do not omit the proper degree of ventilation, never allowing, however, the wind to blow directly upon the ferns and other tender plants. Soil and pots should be provided for use during the fall and winter; sods well rotted and chopped up fine, make the best potting material for tender plants, while for ferns and orchids, a mixture of fibrous peat or leaf-mold and sand is excellent.

Commercial Matters—Market Prices.

The following condensed, comprehensive tables, carefully prepared specially for the *American Agriculturist*, from our daily record during the year, show at a glance the transactions for the month ending July 12th, 1875, and for the corresponding month last year:

1. TRANSACTIONS AT THE NEW YORK MARKETS.

RECEIPTS.	*Flour.* bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.
24 d's *this* m'th	279,000	3,918,000	2,312,000	23,000	—	815,000
25 d's *last* m'th	267,0.0	3,315,000	2,604,000	37,000	161,000	916,000
SALES.	*Flour.* bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.
24 d's *this* m'th	417,000	5,291,000	1,985,000	31,000	—	2,117,000
25 d's *last* m'th	381,000	4,102,000	2,817,000	61,000	151,000	1,363,000

2. *Comparison with same period at this time last year.*

RECEIPTS.	*Flour.* bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.
24 days 1875	279,000	3,918,000	2,312,000	23,000	—	815,000
25 days 1874	271,000	5,310,000	5,117,000	53,600	21,000	916,000
SALES.	*Flour.* bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.
24 days 1875	417,000	5,291,000	1,985,000	31,000	—	2,117,000
25 days 1874	388,000	4,573,000	4,911,000	51,000	—	1,104,000

3. *Stock of grain in store at New York.*

	Wheat. bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.	*Malt.* bush.
July 12, 1875	350,919	1,132,596	44,323	1,163	823,461	312,266
June 7, 1875	668,456	1,304,404	27,678	1,163	546,157	267,085
May 11, 1875	969,804	1,542,924	16,124	16,587	545,209	229,653
Jan. 11, 1875	3,675,122	1,049,900	50,869	191,470	877,014	145,647
Nov. 9, 1874	3,680,141	1,727,510	19,123	117,185	794,722	125,882
June 8, 1875	383,169	116,651	68,188	1,573	323,343	74,669

4. *Exports from New York, Jan. 1 to July 9.*

	Flour. bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.	*Peas.* bush.
1875	925,289	10,638,507	6,008,198	103,667	165	61,840	218,169
1874	1,182,186	20,601,800	10,185,019	513,622	240	62,993	253,765
1873	658,482	6,377,645	6,513,315	199,676	19,226	17,578	53,030
1872	448,080	4,302,508	11,967,765	366,829	22,656	17,215	115,066
1871	993,831	8,193,157	4,824,872	43,018	83,679	14,899	—
1870	850,625	7,954,408	164,468	65,784	—	9,788	—
1869	605,250	6,260,268	1,481,849	68,536	—	42,257	—
1868	481,603	2,956,322	4,044,602	188,093	—	59,368	—

5. *Receipts at head of tide-water at Albany each season to July 1st.*

	Flour. bbls.	*Wheat.* bush.	*Corn.* bush.	*Rye.* bush.	*Barley.* bush.	*Oats.* bush.
1875	11,700	3,217,700	824,700	53,500	—	775,600
1874	17,900	8,618,000	4,199,000	171,100	74,100	996,200
1873	32,100	3,356,700	3,918,100	293,100	12,200	816,400
1872	32,200	1,682,800	6,516,600	203,100	451,500	1,561,200
1871	78,700	4,328,300	4,238,000	46,300	40,100	999,600

Gold has been up to 117, and down to 115¼, closing July 12th at 115⅝, as against 116⅞ on June 12th.... The movements in Breadstuffs have been quite extensive since our last, but at variable prices. Toward the close, the foreign accounts have been favorable to the export trade, and very liberal purchases, particularly of Spring Wheat, have been made for shipment, and a good business also for home use, closing generally at firmer rates, though Oats have been exceptionally depressed. Samples of new Wheat, new Wheat Flour, and new crop (California Chevalier) Barley have been received here since our last.... Provisions have been in less demand, and at the close quoted generally cheaper.... Cotton has been fairly active, closing firmly.... Wool has been moderately dealt in, mostly by manufacturers, but at some concessions from late rates, particularly on Texas and California product, the offerings of which have been liberal. Western Fleece has been arriving very sparingly, and has been held above the views of purchasers, here and at the interior, checking transactions.... Tobacco, Hops, Hay, and Seed, have been less sought after, though toward the close, with warmer weather, State Hops have been attracting more attention.... Ocean freights have been quite active with Grain, Flour, and Provision room wanted. Flour by sail and steam to London, 2*s.* 3*d.* @ 2*s.* 6*d.* per bbl.; Grain by sail, to do., 9*d.* per bushel; Grain by steam to Liverpool, 7½@8*d.*, and by sail, to do., 7½*d.* per bushel. Grain tonnage for Cork and orders, 7*s.* @7*s.* 3*d.*; for Penarth Roads, and orders, 6*s.* 6*d.*@6*s.* 9*d.*; for the Continent, 6*s.* 9*d.*@7*s.* 3*d.* per quarter.

CURRENT WHOLESALE PRICES.

	June 12.	July 12.
PRICE OF GOLD	116 7-8	115 5-8
FLOUR—Super to Extra State	$4 50 @ 5 85	$4 60 @ 6 15
Super to Extra Southern	4 60 @ 8 25	4 60 @ 8 00
Extra Western	4 85 @ 8 50	5 15 @ 8 00
Extra Genesee	5 35 @ 7 00	5 65 @ 7 00
Superfine Western	4 50 @ 4 80	4 60 @ 5 00
RYE FLOUR	4 30 @ 5 50	4 30 @ 5 50
CORN-MEAL	3 60 @ 4 50	3 65 @ 4 75
WHEAT—All kinds of White	1 25 @ 1 35	1 25 @ 1 40
All kinds of Red and Amber	1 09 @ 1 33	1 15 @ 1 38
CORN—Yellow	83 @ 86	83 @ 85
Mixed	78 @ 85	75 @ 84½
White	85 @ 90	88 @ 90
OATS—Western	70 @ 76	63 @ 71
State	70 @ 76	64 @ 71
RYE	87 @ 1 00	90 @ 1 10
BARLEY	Nominal.	Nominal.
HAY—Bale, ₱ 100 lbs	60 @ 1 10	60 @ 1 10
STRAW, ₱ 100 lbs	50 @ 90	50 @ 90
COTTON—Middlings, ₱ lb	15⅝@ 16	15⅝@ 16
HOPS—Crop of 1874, ₱ lb	25 @ 38	25 @ 36
FEATHERS—Live Geese, ₱ lb	35 @ 62½	35 @ 62½
SEED—Clover, ₱ lb	11 @ 11¾	11 @ 11½
Timothy, ₱ bushel	2 55 @ 2 75	2 60 @ 2 75
Flax, ₱ bushel	1 85 @ 2 00	1 85 @ 1 90
SUGAR—Refi'g & Grocery ₱ lb	7¼@ 9⅝	7 @ 9¼
MOLASSES, Cuba, ₱ gal	30 @ 43	30 @ 40
New Orleans, ₱ gal	68 @ 75	70 @ 74
COFFEE—Rio (Gold)	16 @ 19	17¼@ 20
TOBACCO, Kentucky, &c., ₱ lb	10 @ 28	10 @ 25
Seed Leaf, ₱ lb	7 @ 55	6 @ 55
WOOL—Domestic Fleece, ₱ lb	25 @ 60	25 @ 60
Domestic, pulled, ₱ lb	25 @ 51	25 @ 50
California, clip	15 @ 35	15 @ 36
TALLOW, ₱ lb	8¾@ 8¾	9 @ —
OIL-CAKE—₱ ton	39 00 @42 50	40 00 @45 00
PORK—Mess, ₱ barrel	19 75 @19 90	20 40 @20 50
Prime Mess, ₱ barrel	— @18 75	19 25 @19 50
BEEF—Plain mess	8 50 @10 00	8 00 @ 9 50
LARD, in trcs. & barrels, ₱ lb	13 @ 13¾	12½@ 13½
BUTTER—State, ₱ lb	15 @ 28	15 @ 30
Western, ₱ lb	12 @ 24	13 @ 26
CHEESE	4 @ 12½	3 @ 12½
BEANS—₱ bushel	1 55 @ 3 15	1 60 @ 3 25
PEAS—Canada, free, ₱ bu	1 15 @ —	— @ 1 25
EGGS—Fresh, ₱ dozen	18 @ 20	20 @ 23
POULTRY—Fowls	14 @ 25	13 @ 20
Turkeys—₱ lb	16 @ 19	10 @ 15
Geese, ₱ pair	1 00 @ 2 75	1 25 @ 2 25
Ducks, ₱ pair	65 @ 1 00	60 @ 1 00
PIGEONS, ₱ doz	50 @ 2 00	1 00 @ 2 25
PLOVER, ₱ dozen	1 00 @ 1 25	Nominal.
SNIPE, per dozen	30 @ 1 25	— @ —
WOODCOCK, per pair	— @ —	87 @ 1 12
SPRING CHICKENS, ₱ lb	— @ —	25 @ 35
TURNIPS ₱ bunch	— @ —	4 @ 4
CABBAGES—₱ 100	— @ —	4 00 @ 7 50
ONIONS—₱ bbl	50 @ 1 75	2 00 @ 4 00
ONIONS, new Bermuda, crate	75 @ 1 00	1 00 @ —
POTATOES—₱ bbl	1 25 @ 2 00	1 50 @ 6 50
SWEET POTATOES—₱ bbl	2 00 @ 3 50	— @ —
BROOM-CORN	8 @ 14½	7 @ 13½
LETTUCE, per bbl	2 00 @ 7 00	1 00 @ 2 50
RASPBERRIES, ₱ qt	— @ —	7 @ 15
GOOSEBERRIES, ₱ bush	— @ —	1 50 @ 2 00
CURRANTS, ₱ lb	— @ —	6 @ 15
CHERRIES, ₱ lb	— @ —	4 @ 14
WHORTLEBERRIES, ₱ bush	— @ —	5 00 @ 8 50
STRAWBERRIES, ₱ quart	3 @ 15	6 @ 15
APPLES—₱ barrel	75 @ 2 25	1 50 @ 4 50
CRANBERRIES—₱ box	1 00 @ 2 00	— @ —
GREEN PEAS, ₱ bbl	3 00 @ 5 00	2 25 @ 4 50
TOMATOES, ₱ crate	— @ —	2 50 @ 4 00
SPINACH, ₱ bbl	75 @ 1 50	— @ —
SPRING BEANS, per bbl	3 50 @ 4 00	1 00 @ 2 50
CUCUMBERS, per bush. box	2 00 @ 6 00	50 @ 75
WATERMELONS, ₱ 100	— @ —	10 00 @40 00

New York Live-Stock Markets.

RECEIPTS.

WEEK ENDING	*Beeves.*	*Cows.*	*Calves.*	*Sheep.*	*Swine.*	*Tot'l.*
June 21	9,411	124	4,534	23,218	38,996	66,283
June 28	8,143	89	4,680	22,601	27,862	63,380
July 5	9,038	79	3,391	19,510	26,074	58,115
July 12	7,179	87	2,834	21,187	20,459	51,764
Total for 4 Weeks	33,814	379	15,442	86,516	103,391	239,542
do. *for prev. 5 Weeks*	41,296	379	22,336	97,838	138,598	295,447

	Beeves.	*Cows.*	*Calves.*	*Sheep.*	*Swine.*
Average per Week	8,453	95	3,860	21,629	25,847
do. do. *last Month*	8,259	76	4,467	18,567	27,749
do. do. *prev's Month*	9,257	106	3,042	18,964	31,432

Beeves.—The market during the past month has been more than usually free from change. Prime stock has been always in demand, and has met a strong market; poor stock as usual has suffered when something must give way. Fine heavy steers are scarce, and have sold well all through the month, closing with an advance of ¼c. per lb. on a brisk demand. The enlarged demand for this class fortunately helped the light common cattle which happened to be in poor supply. Closing prices were 13¾@14c. per lb. for extra and fancy cattle, to dress 59@60 lbs. the gross cwt., and a few reached ¼c. higher. Common to prime native steers to dress 56 to 58 lbs., sold for 11½@13¾c. per lb., and Texans and poor natives went for 8¾@10¼c. per lb. to dress 55 to 56 lbs. per gross cwt.

Prices for the past four weeks were as follows:

WEEK ENDING	*Range.*	*Large Sales.*	*Aver.*
June 21	6½@14 c.	11¾@12¾c.	12 c.
June 28	7 @13¼c.	11½@12¼c.	11¾c.
July 5	6¾@14 c.	11½@12¾c.	12 c.
July 12	7½@14½c.	11¾@12¾c.	12¼c.

Milch Cows.—For this stock there has been a quiet market through the month, with slow sales. Prices are somewhat lower; $45 to $75 being realized at the close for fresh milkers. A lot of common cows from Ohio sold last week for $42 to $52 per head.... **Calves.** There has been but a poor market for calves, especially for poor buttermilk veals, which have been almost unsalable. As we close there is a little better feeling, and a fair demand at good prices. Veals sold at 7@8¾c. per lb. for good milk-fed and common to fair buttermilk calves at $5 to $12 per head. A lot sold at 6¼. per lb.... **Sheep and Lambs.**—The worst market of the season for sheep and lambs was two weeks ago. Since then there has been a slight recovery, and fat stock moved off more briskly at 4@5¼c. per lb. for prime sheep, and 8¼@9¼c. per lb. for lambs; 9¼@10¼c. was paid for choice State and Delaware lambs, and 9@9¼c. for Canada lambs, of which the first arrivals of the season came to hand the last week.... **Swine.**—Dressed hogs have been offered, and sales made were at 9¼@9¾c. for heavy, and 10c. per lb. for light

containing a great variety of Items, inc'uding many good Hints and Suggestions which we throw into smaller type and condensed form, for want of room elsewhere.

Remitting Money: — Checks on New York City Banks or Bankers are best for large sums; make payable to the order of **Orange Judd Company. Post-Office Money Orders** for $50 or less, are cheap and safe also. When these are not obtainable, **register** letters, affixing stamps for postage and registry; put in the money and seal the letter in the presence of the postmaster, and *take his receipt for it.* Money sent in the above three methods is safe against loss.

☞ N.B.—The New Postage Law.—On account of the new postal law, **which requires pre-payment of postage by the publishers, after January 1st, 1875,** each subscriber must remit, in addition to the regular rates, **ten cents for prepayment of postage by the Publishers, at New York, for the year 1875.** Every subscriber, whether coming singly, or in clubs at club rates, will be particular to send to this office postage as above, *with his subscription.* Subscribers in British America will continue to send postage as heretofore, pre-payment here.

Bound Copies of Volume Thirty-three are now ready. Price, $2, at our office; or $2.50 each, if sent by mail. Any of the last eighteen volumes (16 to 33) will also be forwarded at same price. Sets of numbers sent to our office will be neatly bound in our regular style, at 75 cents per vol. (50 cents extra, if returned by mail.) Missing numbers supplied at 12 cents each.

"Where Can I Get?" this, that, or the other thing, is the purport of a large share of the letters received at this office. Many of these are answered in our advertising columns directly, while those columns indirectly tell where the majority of articles can be had. Our friends should remember that implement dealers have the majority of useful implements; that the leading seedsmen have full stocks of seeds; that the nurserymen who have the enterprise to advertise, are wide awake enough to have all desirable things in their line; and so with other dealers. It is safe to assume that an enterprising man in any business, if he has an order for an article which he has not in stock, will procure it rather than lose a customer. Look at the advertising pages before writing to us. Of course we are willing to give information when our columns do not contain it. N. B.—When writing to an advertiser, say that you were induced to do so by seeing his name in the *Agriculturist.*

Downing's Landscape Gardening.—New Edition. The Orange Judd Company, 245 Broadway, N. Y. It is now some 30 years since this work was first published, and there can be no greater evidence of its value, than that a new edition should be demanded at this late day. Other works have appeared treating the same topics; many of the places chosen

to illustrate this, have fallen into neglect and are now hardly known; since it first appeared, the number of ornamental trees and shrubs has more than doubled, and the methods of the art have greatly changed, yet in spite of all these, the work is not out of date. The principles Downing set forth, his views of the beautiful and picturesque, which he gave with a grace and charm unequaled, remain true to the present day, and the work is now, and is likely to remain, one of the classics. In 1859, a few years after the sad death of the author, a new and enlarged edition was brought out, illustrated with numerous new engravings, and enriched by a copious supplement, by Henry Winthrop Sargent, Esq. From the time the work was written, to the appearance of that edition, the number of ornamental trees had increased wonderfully, and Mr. Sargent, a friend and neighbor of the author having at his place, Wodenethe, at Fishkill-on-Hudson, accumulated and tested every procurable novelty, was the one of all others to bring up this portion of the work to that date, and the supplement made the edition of 1859 of especial value. For the edition now ready, Mr. Sargent has prepared another supplement, which is not so voluminous as the former one, there not being so many new trees to describe. It is valuable as giving later experience, and that in especially disastrous years, with many plants that in 1859 were new and untried. So far as the practical part of the work goes, this supplement brings it up to the present time. We know of no work better calculated to encourage a taste for rural life, or where that taste is already formed, to properly direct it, than this. Price, by mail, $6.50

The Potato Beetle.—How far east has it reached?—We of course consider the Colorado pest as *the* potato bug or beetle. We hear from it well nigh the whole length of Long Island, and it is at Middletown, Conn., on the Connecticut River. We can not say that we shall be "glad to hear" of its being farther east, but it will be a matter of interest to know just how far it has progressed toward sunrise.

The Fountain Pump.—"W. W. B." The pump made by J. A. Whitman, Providence, R. I., is a really excellent affair, and we supposed that we had already said so, but find that we can not refer you to the item. We have not only used it ourselves, but have recommended it to our friends. A correspondent in Colorado was in need of a pump for her greenhouse, that could be sent her at low express charges. We advised the Fountain Pump, and it was found to be just the thing.

Strawberries at the Mass. Horticultural.—At the Strawberry Exhibition held at Boston, July 2nd, the first prize for four quarts of any variety, was taken by Hovey & Co. for Hovey's Seedling, which originated with them 40 years ago. It is remarkable that this variety, now so old that strawberry growers of the present day hardly know it by name even, and rarely seen in cultivation, should have carried off the prize. It shows that so far as quality is concerned, we have not surpassed this excellent variety. The introduction of Hovey's Seedling gave a great impulse to strawberry culture, and in rich, strong soil it gives large fruit of the highest excellence. On the other hand, if planted upon the light soils of New Jersey, where the great market supplies are grown, it is absolutely worthless. J. B. Moore took the second prize with Jucunda, and Warren Heustis the third with Col. Cheney. The exhibition was the largest of the kind ever held by the society, 116 dishes of strawberries being shown.

Crop to Plow Under.—"O. W. F.," Blackstone, Mass. The only crop that can now be sown for plowing under, is buckwheat. This may be sown at once, at the rate of six pecks of seed per acre, so as to have a thick growth. It may be plowed in when in blossom, late in August, but must not be cross plowed. The ground may be harrowed two or three times along the furrows, but carefully, lest the buckwheat be torn up. Rye may be sown early in September, and next year the operation may be repeated. Two fully grown green crops can not be plowed in in one year after rye is harvested; there is not sufficient time for it.

Ditching Plow.—"O. E. S.," Bath, Me. A plow for loosening the soil for ditching, or for subsoil plowing, as a temporary expedient for partial drainage, is made by Chamberlin & Sons, Olean, N. Y.

A Tight Stable Floor.—"S. E. K.," Eastham, (?). A substantial, durable, water-tight stable floor, and one impenetrable by rats, may be made by paving it with round cobble stones, and filling between them with hydraulic cement and sand, (four or five parts of sand to one of cement); when the cement is dry, saturate it with as much hot gas tar as it will absorb. A shallow channel to drain off the liquid, should be made in the center of each stall. At the rear of the stalls, running the length of the stable, should be a gutter, into which the other channels discharge. This floor may be washed, and kept very clean and sweet.

Depraved Appetite.—"J. M. H.," Fairfield Co., Conn. When cattle devour bones, rags, earth, and such matters, it is well to give them a good dose of physic; one pound of Epsom Salts dissolved in water, with an ounce of ground ginger mixed with it, would be beneficial, or a pint of raw linseed oil. A pint of linseed meal and two ounces of salt per day, should then be given to them, and if they still eat bones, a little bone-meal may be offered to them. A depraved appetite is generally caused by indigestion, and exists along with a general unthriftiness of appearance of the animal.

Foundation for a Rammed Clay Floor.—"A Subscriber." A proper foundation for a hard rammed clay floor, would be well rammed gravel. The foundation must be solid, and yet porous and well drained, so that the floor will not become moist from below.

New York State Dairymen's Association.—The next annual convention of the N. Y. State Dairymen is to be held at Norwich, Chenango Co., December 8th and 9th.

The Speakman Wire and Picket Fence.—Thos. H. Speakman, the manufacturer of a combination fence, made of wires and pickets, writes us in reference to some remarks made in the *Agriculturist* of June, about fences of wire and pickets interwoven. We have heretofore spoken favorably of the Speakman fence, and had no reference to it when we wrote of a claim to a patent-right on an interwoven fence. In the Speakman fence the pickets are not interwoven, but the wires are inserted through the pickets, which are thus strung upon the wires, and parties who have used it speak highly of it. The practice of simply interweaving pickets amongst the wires can hardly be considered as a novelty worthy of a patent, and we doubt if it would be worth paying a royalty for, in competition with a substantial fence, such as the Speakman fence undoubtedly is.

Baling Hay.—From our statement in regard to baling hay with the Dederick perpetual hay press in the *Agriculturist* for April last, it has been inferred that only 8 tons of hay can be placed in a common grain car. This is incorrect; this press will so bale hay that 10 tons can be put into any grain car. The Dederick press is thus made to meet the requirments of western packers, who need to ship 10 tons in a car. With steam power 20 tons per day can be baled with this press.

To Paint a Kitchen Floor.—"M. M. A.," Baraboo, Wis.—A kitchen floor may be stained of an agreeable and serviceable color, by coating it with a mixture of five pounds of French ochre, a quarter of a pound of glue, and one gallon of hot water. This should be put on hot, and, when thoroughly dry, covered with two coats of boiled linseed oil. The floor should be made smooth before it is colored.

Extracting Stumps.—"S. W. J.," Selma, Ala. To pull up stumps of newly felled trees, requires a very powerful machine, because the roots being all sound, hold fast to a large portion of the soil which must be lifted with the stump. The ground is also very much disturbed, and requires expensive leveling. We would rather sow a newly cleared piece of land to grass and clover, and leave it for a few years, if in a locality where grass and clover can be grown profitably, or otherwise cultivate the land in the best way possible, until the smaller roots have decayed. By waiting a while stumps can be extracted at much less cost than when the trees are just felled. A very good stump extractor is made by H. Chamberlin, of Olean, N. Y.

Books on Farming.—"L. N.," Augusta, Ga. There is not, and never can be, any one book, or any number of books, from which a farmer can learn his business. General principles of the art of agriculture may be learned in this way, but their proper application to the thousands of various circumstances of locality, soil, climate, markets, etc., depend upon the character or capability of the man himself. It is as in sailing a ship, a person may learn all about the science of navigation, ship-building, and meteorology perfectly, but if he does not "know the ropes" about the ship, he will be wrecked on his first voyage. So the farmer must "know the ropes" on his own farm, and then he can derive very valuable help from books and agricultural journals.

Poultry Yards.—"W. R.," Columbus, O. It is possible that a visit to the poultry yard of Mr. W. H. Todd, of Vermillion, Ohio, would furnish you an opportunity of seeing how such a yard is managed.

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Every Trial Trip Subscriber, who sends 75 cents for the *American Agriculturist* for six months, as above, may also select one of the **BEAUTIFUL CHROMOS,** offered on page 319, and it will be sent to him **free,** as there offered, (on forwarding the small sum named for mounting, packing, and delivery.)

☞ **Thus, a single dollar will secure the paper post-paid for six months, and a Mounted, beautiful Chromo, delivered, while the Chromo alone is worth MANY DOLLARS.**

Another Use of the Crow.—"It is said," that crows will eat the Colorado potato beetle. We know it is their nature to devour insect larva, beetles, and worms, and it is not improbable that the story that they will eat potato beetles, may be true. It might be well to give them a chance, as well as other known insect-eating animals, as the skunk for instance, which certainly devours crickets, cockchafers, and other "bugs" in great numbers, and not attempt to drive them away, or kill them off. Certainly neither crows nor skunks, in all their depredations, have done so much mischief as cutworms and potato beetles have done this season, nor will it cost a tithe so much to prevent them from doing what little harm they may do, or are charged with.

Late Chickens.—"S. A. M.," Glencove, L. I. It is difficult and unprofitable to raise chickens hatched in August. They stop growing as soon as the cold weather arrives, and are not strong enough to resist the cold of winter. If they do survive, they consume several times as much as they are worth before spring. We would not allow any hens to brood now, but would break them up, and get them laying again. The eggs are worth more than the chickens.

Durable Stable Floor.—"E. E. P. T.," Boone Co., Ky. It is impossible to make a stable floor of cement alone, that will stand the trampling of horses that are sharp shod. The floor described and illustrated in the *American Agriculturist* of November, 1873, page 415, in which a pavement of cobble stones is filled in and covered with cement and gas tar, or asphalt, is preferable to any other that we know of.

Fish Seine.—"E. S.," Clinton Co., Iowa. Gilling twine, of which seines and other fish nets are made, is worth 50 cents a pound. It is cheaper to buy the nets ready made, than to make them by hand, even when the maker is expert at the business. They are now made by machinery in lengths of 100 feet, and 10 feet wide, and sold at $3 per pound. The weight of the net of course depends on the size of the mesh and the coarseness or fineness of the twine.

Fertilizers for Fall Sowing.—"S. N.," Loudon, Va. In the fall we need an active fertilizer, one that will push forward the young plants and enable them to become well established before winter. Phosphates are not generally required by a young plant, it is only when the seed is to be formed that the plant needs to store up this material. If superphosphates are applied in the fall upon soil containing lime, the excess of soluble phosphoric acid combines with the lime and makes an insoluble, (or only slowly soluble), phosphate which has no appreciable effect upon the crop. It is for this reason and not for any fault or defect of the fertilizer that it so often seems to be useless. Guano on the contrary is immediately active, and much more suitable for fall use than any other artificial manure. Superphosphate of lime should be applied in the spring, which is the season when it will be most useful to the plant.

Preservative for Fence Posts.—"P. C.," Hudson Co., N. Y. Crude petroleum is an excellent material for painting fence posts. It needs no admixture; it may be put on with a broad white-washing brush very quickly, and gives an agreeable brownish color to the wood.

The Butter, Cheese, and Egg Trade.—The statistics of the trade in butter, cheese, and eggs for the year ending May 31st, are reported as follows:

	Butter.	*Cheese.*	*Eggs.*
	Pkgs.	Pkgs.	Bbls.
Total receipts	1,046,584	1,905,978	455,447
Total exports	44,832	1,701,328	
Average receipts per month	87,215	158,831	37,953
Average exports per month	3,736	141,819	
Range of Prices.	Per lb.	Per lb.	Per doz.
Eastern	19@38c.	12¼@16¾c.	15½@30c.
Western	13@31c.	10 @15½c.	15½@30c.

Failing to Breed.—"S. H. I.," Ute Creek, N. M. The probability is that your hens and Berkshire sow fail to breed because they are too fat. If the condition cannot be conveniently reduced any other way, a few doses of epsom salts might be of service to the sow. As to the hens, we would get rid of them, and procure some Leghorns or Brahmas, which are persistent layers, even when fat.

Relative Cost of Water-Power and Steam.—"W. W. S.," Mifflin Co., Pa. The original cost of the most expensive system of water-powers, such as are used at Lowell, Mass., and at the water-works at Philadelphia, varies from $100 to $200 per horse-power. This includes canals, dams, and costly turbine wheels. For wooden dams, and overshot or lower grade iron wheels, the cost would not exceed $50 per horse-power. Steam-powers, inclusive of engine-houses and foundations for 100 horse-powers, cost about $300 per horse-power, and for 300 horse-powers and upwards from $115 to $150 per horse-power. But in operation the cost of water-power is from one-fourth to one-tenth that of steam-power, with coal not over $6 per ton.

Ayrshire Register.—We have received a copy of the North American Ayrshire Register, Vol. 1, edited by E. Lewis and Joseph N. Sturtevant, of South Framingham, Mass. The volume contains over 500 entries, and every effort has been made by the very able and conscientious editors to do their work so thoroughly, that the register may be a true record of thoroughbred animals, whose pedigrees show them to be without doubt or suspicion. The editors make the valuable suggestion that breeders of Ayrshires present a copy of the record to every purchaser of their stock, who does not already possess one. This will certainly have the effect to increase the public interest in the record, and encourage the desire of new purchasers to keep their stock pure.

Cream Cheese.—Mrs. "S. N.," Phila. Pure cream cheese is made for the French and English markets in small rectangular cakes, about 5 or 6 inches long, 3 or 4 inches wide, and 1½ to 2 inches thick. They are eaten fresh, and are very delicious. The milk is set for about 15 or 18 hours, or until the cream has formed a somewhat tenacious skin over the milk. The cream is then carefully removed, and put into a muslin bag to drain for about 20 hours, when it is placed in wooden molds, open at the bottom and the top. A layer of rushes is placed in the bottom of the mold on a clean table, and another layer above the cream. A board is then placed over a row of the cheeses. This is done in the evening, and in the morning they are taken to market. No salt is used.

Calculating Machines.—"R. E. G.," Rock Hill, S. C. A list of the various calculating machines that have been invented since the 4th century, B. C., up to the Babbage calculator of 1833, and the machine of G. & E. Schentz, of Stockholm, invented in 1853, may be found in the new Appleton's Cyclopedia. One of the last mentioned machines is now in the Dudley Observatory, Albany, N. Y. A very useful calculator, consisting of concentric circular plates, is sold at the philosophical instrument shops, as is also the ordinary slide rule, by which many calculations in multiplication and division may be made with great rapidity.

Sales of Short-Horns.—The following important sales of Short-horns have occurred since our last report. At Toronto, Canada, on June 16th, six head from the Hillhurst herd of M. H. Cochrane, of Montreal, and 34 head from the herds of Messrs. Miller & Beattie, of Ontario, Canada, were sold. The 6 head from Hillhurst sold for $30,850, an average of $5,141.67. Airdrie Duchess 5th, a seven months old heifer-calf, sold for $18,000 to Avery & Murphy, of Michigan. 5th Duke of Hillhurst, a two months calf, was taken at $8,300 by an association of breeders from Tennessee. The 34 head, all cows and heifers, of Miller & Beattie, brought $41,730, an average of $1,227.35. These prices are all in gold. No bids were made for the bulls offered. Of less fashionable stock there have been sales of 48 head for John Bond, Abingdon, Ill., at an average of $165 per head; of 83 head for S. Cobbin, and Green & Morton, at Cedar Rapids, Iowa, at an average of $207; of 52 head for W. Warnock, of Cynthiana, Ky., at Cedar Rapids, Iowa, at an average of $218; of 73 head for Joseph Scott, of Ky., at Galesburg, Ill., at an average of $197; 9 head for J. S. Latimer, also at Galesburg, for an average of $160, and 9 head, at the same place, for Niles Bros., averaged $132.

Millet.—"J. A. L.," Van Buren, Ark. If millet is raised for the seed, it may be thrashed either by the flail or by the thrashing machine. The straw is then of little use except for litter. If it is grown for fodder, it should be cut when in blossom, and cured as hay is generally cured, but without much exposure to the sun. It is best cured in cocks. The seed after it is thrashed out, may be cleaned in the ordinary fanning mill, by using the same sieves as for cleaning clover seed, and blowing with a light draft.

Sowing Clover in July.—"H. R.," Essex, Ill. If the season is not too dry, a good catch of clover ma, be got by sowing in July, or early in August. The trouble is that the late summer drouths or early fall frosts may injure the young plants. If these are escaped, the catch will probably be as good as a spring sowing. We have had an excellent catch of clover by sowing with buckwheat in July.

Profit of a Berkshire Boar.—"R. G. H.," Camden, N. Y. There is no doubt that the purchase of a good Berkshire boar, for your own as well as your neighbor's use, would be profitable. A boar will easily sire 100 to 200 pigs in one season, and if each one is worth only one dollar more than a common pig, the cost of the boar will be repaid several times over the first season. The value of any pure bred animal to a farmer, if estimated in this way, will be seen to be much greater than its cost. The better the animal that is selected, the greater the probable profit from it. The Berkshire has a good ham, and a deep side for bacon, with small offal. It excels in these points.

SUNDRY HUMBUGS.—In former articles we have alluded to the fact that some humbugs are very difficult to treat. One class of these is where the probabilities all indicate that a concern is a humbug, but the evidence comes just short of being proof. Another class is those relating to medical matters of a kind which will not allow of a full exposure without the use of terms hardly proper to print in a family journal. Still another are those schemes or occupations in which so great is the temptation that a large share of those engaged in them are swindlers, and to denounce these as a class is unjust to the few honest men engaged in the pursuits, which of themselves are honorable and legitimate. Under this last head are included lightning-rod men and tree-peddlers, or nursery agents, of whom more than any others, except quack medicine chaps, are the complaints most numerous. Letting the lightning-rod men pass for the present, let us define

OUR POSITION AS TO NURSERY AGENTS AND TREE-PEDDLERS.

Complaints of these have been especially numerous this year, and in view of the rascality of some of the transactions, we have said that it would be safest to have nothing to do with the whole lot. Some of our nursery friends think this rather too sweeping, as they have agents who they know to be perfectly honest men. We must admit that it is hard for such to be classed with swindlers, and that there are those who do not deserve it, we are well aware. There was one who for ten or more years represented one of the large nurseries in the territory around New York City, who could be implicitly trusted, and one who was so sure of his own position in the community, that he liked to have us show up the rascals in the trade. Now what shall we do? We have the community to protect against 19 rogues, and to avoid injuring the business of one honest man. It is the true interest of every fair-dealing nurseryman that these swindles should be stopped, and we are willing to co-operate in any feasible plan which shall encourage honest agents, and at the same time protect the community from the dishonest ones. Now, gentlemen, what do you propose? One of your reasons for employing traveling agents, is that it encourages tree-planting, and that persons are by personal application induced to plant trees who, if left to themselves, would not do it at all.—Well, this is just what we would encourage, and if we could cause 10 trees to be planted where one now is, we should gladly do it, but then we wish the trees to be of the right kind and true to name, and not the refuse of nurseries labelled promiscuously. We have been at the nurseries and know how this thing is managed. Smith, the peddler, calls himself an agent, he gets orders for trees from Jones' nursery. At the digging season he goes to Jones and buys certain blocks or odd rows of trees; he has his own men to dig them, he takes them to some vacant place, labels them as may be, packs them in lots to suit his orders, and all that Jones has to do with the matter is, the trees grew on his ground, and he sold them. Several years ago we were at a large nursery, and learned the opinion of that concern, of peddlers. A lot of several acres was being surrounded with a high fence, and upon inquiry we were informed that the enclosure was for the peddlers, who were to be rigidly excluded from the regular packing yards and sheds, as the losses from theft by these men must be stopped. Now it is due to themselves and due to the public that the nurserymen devise some plan by which, when an agent claims to represent a particular nursery, the one who would purchase trees shall know that he is duly authorized; moreover, the purchaser should have some assurance that the trees when received did really come from said nursery, and that the proprietors of that nursery are responsible for their being the trees ordered, and that when they left the nursery they were correctly labelled. The purchaser has as much right to a reasonable assurance that he gets what he pays for, as has the seller that he will get his money. We should like to have those nurserymen who think our remarks about agents too general, tell us what provision is made to secure the purchaser in this respect....If you will show us any way by which the farmer can tell between the legitimate agent and a swindler, we will gladly welcome it, and give it the widest publicity....We repeat our caution to order nothing for which unusual claims are made. If a peddler offers things which no one else has, or things not before heard of, such as "self-pruning grape-vines," strawberries which grow on "bushes," peaches grafted on the

"French willows," or pear-trees on the maple, or any such stuff, don't believe him about these, and be very sure that whatever else he may have is likely to be bogus....Here comes a complaint all the way from Virginia about a

DOLLAR-STORE IN BOSTON.

The writer's daughter sent $21, and "received a miserable lot of cheap stuffs and imitations, any and all of which can be bought at any cross-roads store for the same, or less"—then there was the cost of freight and boxing added. The letter, and the New York references given, show that the writer is a gentleman of intelligence and good social standing. Now, when such as he can be induced to suppose that any one can sell more than a dollar's worth for a dollar, we do not wonder that the less intelligent are so often swindled. We do not see how we can help our friend; his money is past recovery, but he can console himself with the thought that the lesson may be worth all it cost to the daughter. There is at least one family in Fairfax Co. to whom all such schemes will hereafter appeal in vain....The alertness with which the sharps seize hold of every possible bait to catch the flats, is shown in the case of a

BLACK HILLS MINING COMPANY.

The vague reports that gold had been found in the Black Hills were enough. Notwithstanding that the government had given warning that all whites would be kept out by the military forces, the word "gold" was sufficient to start with. Circulars containing every report and guess at its occurrence in the Black Hills, are sent out, inviting subscribers to a mining company—only $10 a share, and "Fortunes for the Original Subscribers"—and we hope they may get them—the fortunes we mean. The latest account from the Black Hills does not much encourage this little scheme for getting $10 out of the credulous....A friend in Kansas who received one of the Geneva watch circulars—by the way, Geneva watches "is riz," they used to be only $4, but now $8—says that if the vender will take dead grasshoppers for a watch, he will trade. Don't do any such thing, Mr. Kansas man. In time of scarcity you could eat the grasshoppers, but we don't know what earthly use the watch would be.

MEDICAL MATTERS

are not at all lively under a July sun. Several have inquired about one "Dr." Price, who is sending around circulars, setting forth, though not in the precise words, that he is "death on fits," accompanied with a form of agreement that he will return the $20 if the patient is not cured. We are asked if he is responsible, and will return the money in case of failure to cure as agreed. We do not know, and look upon that as a matter of secondary importance. The great point is, what kind of a "Doctor" can one be who will "guarantee" a cure of any disease? or who will say of any medicine, "it will surely cure any case," and all this without even seeing the patient. If one who does this was educated as a doctor, he has lost all claims to the title.

ABOUT PATENT MEDICINES.

A correspondent, "M. N.," Crawford Co., Ill., writes that he considers our humbug exposures of great value, but cannot agree with us in denouncing all "Patent Medicines" as humbugs, and mentions some which he thinks should be excepted, especially a certain "Pain Killer." As our friend may be taken as a representative of a class of intelligent persons, who hold similar notions, we give his letter the respectful consideration its evident sincerity deserves. We may state that but few of the so-called patent medicines are patented at all. If it were so, every one could know their composition, and all secrecy—in which their great value to the proprietor consists—would be at an end. Our objections to these secret medicines are several, but first and mainly because they *are* secret. We object to taking or giving anything whatever, the composition of which is not fully known. We would not treat a dumb animal or a plant with an unknown drug, much less a human being. These medicines may be divided into two classes; those which possess really active properties and have a positive effect when administered; and those which are practically inert, or consist of some stimulant or tonic, and act more upon the imagination through the remarkable circulars which accompany them than by virtue of any medicinal agent they contain. This last class are the worst swindles, as they give a stuff that costs a mere trifle for a high price, but many of them are so nearly nothing that the harm they do is more to the pocket than to the system. The whole class may be set down as worthless trash, and in the main are agents to draw money from the nervous, timid, and credulous for the benefit of a few ignorant pretenders, who, with their flashy diamonds, fast horses, and fast life generally, are a sad blotch upon our civilization. As to the other class, those medicines which have some potency, we object to these because they are powerful, and those who use them are working in the dark. Morphine is a useful remedy, but should always be given knowing that it is morphine, and just as dangerous as it is useful. Not one mother in a hundred would apply a solution of morphine to the mouth of her teething babe did she know that it was morphine, but mix it up with sugar, and call it somebody's "Soothing Syrup," it is used without a question, and thousands of little white gravestones all the way from the Atlantic to the Pacific attest its soothing power. Certain worm lozenges were popular 30 years ago, and their advertisement was headed "Children Cry for Them," and hundreds of parents who would have been horror-stricken had their physicians prescribed a dose of calomel, fed their children on these lozenges. The writer, at a public lecture exhibited the quantity of calomel he had separated from a box of these lozenges, and had the satisfaction of checking their sale in that city. Now while we do not deny that in some cases these remedies may be useful, we emphatically and wholly object to them on account of their secrecy. They may be hurtful, and are always needless. When we say needless, we mean in the secret form in which they are put up. None of this active class of secret medicines contain *anything of any medicinal value* that is not to be found at all decent drug stores, or which is not at the command of every one. Compounds of common drugs put up as secret remedies, are sold at a very high price, as they must be to pay for the enormous advertising and all the machinery of agents and circulars, and the customer buying them in this form pays many times more for them than he would to get them under their proper names. Take the "Pain Killer" in question. The writer was for many years a druggist, and sold the original maker of the stuff the drugs from which he compounded it, and knows that there is nothing in it that is not within reach of every one. Every family should have a few of the leading simple remedies at hand to use in an emergency, and all intelligent persons should know their properties as well as what to do in ordinary illness, but we do not think any one has a right to administer to another an article of unknown composition. These are in brief some of the reasons why we class them all, and without any exceptions, as humbugs....We quite agree with what our correspondent says about

SELLING LIQUOR IN DRUG STORES,

which is undoubtedly a great and growing evil, but this hardly comes under the head of humbugs....Medical humbugs have been distressingly tame of late; we were looking over our budget, thinking how refreshing it would be to get hold of some "soul-harrowing" narrative, something say in the Eddie Eastman style, that would make cold shivers run down one's back, and his toes to tingle, when we came across the next best thing to a new friend, a long absent old one.

OLD MOTHER NOBLE,

bless her dear old heart, turned up once more! We thought the good old critter had gone the way of all good old mothers, but here she is as fresh as she was in 1868, and tells the same dear, delightful story. There is the same picture of the old stone-wall where this remarkable discovery was made, with the well-sweep in the distance. Ah that we should have had to dispel all this romance and tell what the stuff was made of! So Huyler still waves, but Clark Johnson, M. D., where is he?

Plants Named.—B. Hassett, Iowa. The grass sent is *Poa pratensis*, or Kentucky Blue Grass. You are right in supposing it would make a good lawn. It is one of the best lawn grasses we have...."A. D.," Port Huron, Mich. The plant is a Meadow-Rue, *Thalictrum purpurascens*, and very common.

An Erratic Rose.—"P. R.," Saugerties, sends a specimen for us to "make out what it is, and give the cause."—It is a rose, on which the end of the stem not content with producing one flower, has pushed upwards and has prepared to produce another flower. This is not at all rare among roses; we see more or less cases of it among our own every year, and a few years ago we gave a figure of one which had repeated this, and might be called a three-storied rose. Some bushes do so habitually; we once knew one which bore no other roses. As to the cause—we can no more tell that than we can why the rose is double. In cultivation we have encouraged an unnatural condition, as we like double roses better than we do those in their natural state, which is single; but it is no more strange that the stem should take on an unnatural development, than that the stamens should turn into petals, as they do in double roses.

Value of Goat Manure.—"B. P. T.," Placer Co., Cal. The value of goat manure so far as we know, has not been thoroughly investigated. So far as it has been experimented with, it has been found very similar to the manure of sheep, and it is probably of equal value. Sheep manure is rich, and readily ferments and decomposes. When fresh, it consists of 68 parts of water, 19.3 per cent of organic matter, and 12.7 per cent of salts in 100. Payen & Boussingault estimate that equal effects are produced by 36 parts of sheep manure, 54 of horse manure, 63 of pig manure, and 125 of cow manure. In field experiments sheep manure has given a nine-fold increase of crop, and horse manure, seven-fold. It has also been found in effect to come next in value to ox blood. In our own experience we have found the manure from the sheep-yard to give better crops than any other.

Leaf-Mold as Manure.—"T.," Newcastle, Cal. Leaf-mold is of no use unless thoroughly rotted. It is then cool and moist and very suitable to mix with the soil about the roots in planting fruit-trees. Rotted cow manure is very useful for this purpose. Alfalfa can scarcely be grown in an orchard without injury to the trees. It is a deep-rooted and long-lived plant, and will exhaust the subsoil too much for the good of the trees. Where clover cannot be grown, we would keep the soil of an orchard clean, or in hoed crops.

The "Wyandotte" Corn.—"T. A. B.," Little Rock, Ark., writes that some years ago he had a kind of corn known as the Wyandotte, which produced six or seven stalks, each bearing an ear, from one grain. He wishes to know where he can procure seed of this corn now. As we are not acquainted with this corn, which should be a very valuable kind, we should be glad to hear from any of our readers who may know of it.

To Train a Horse to Trot.—"H. H. R.," Peekskill, N. Y. The Orange Co. Stud Book contains many useful hints as to training and managing horses. It can be had at this office, or sent by mail, for $1.00. The information contained in this book, may perhaps answer your purpose; if not, and you believe your horse to be worth the cost, the best plan would be to employ a professional trainer.

Drilling Grass Seed.—"W. E.," Cecil Co., Md. It is a saving of trouble to drill the grass seed along with the grain, but we do not like the plan, as it crowds the young grass too much. We would rather take the extra trouble to sow the grass by hand or by broadcast sower, immediately after the ground is harrowed, and while the soil is fine and mellow, and then drill the grain and roll. We have always got a better stand in this manner, than by sowing with the drill.

Poisoned Cats.—"A Mississippi Subscriber." The symptoms described, viz., dullness, loss of appetite, moping, vomiting of offensive matter, would lead to the supposition that the cats were poisoned by some means. Cats have few or no diseases, except in their early life, and are remarkably hardy; nor do we know of any reason except the one indicated, for the unhappy fate of your seven pets. There is no book known to us which treats of the management of cats. The only remedy we ever heard of being given to these animals, is sulphur in milk, at the period when they are passing through their youthful troubles. A few pinches of flowers of sulphur is stirred in milk and given to them.

How to Use a Dead Horse.—"J. E. E.," Carrollton, Ga. A dead horse or other animal should be skinned, and roughly cut up into as many small pieces as possible. A plot of ground a few rods square, should then be plowed deeply, and the carcass thrown upon the soil in the center of the plowed ground. Some freshly dry-slacked lime should then be scattered upon the heap, so as to cover it thinly but wholly. The loose earth is then to be heaped over it a foot in depth, and the pile covered with boards, so that dogs can not get at the heap and tear it up. If the least smell is perceived, more earth should be thrown upon the heap. In three months the heap may be dug over or turned over with the plow, and well mixed. The bones that can not be broken up should be taken from the heap, and the fine matter will be worth at least $20 per ton, to use in the hill for corn or cotton. The larger bones may be broken up and buried among the roots of grape vines or fruit trees.

Time for Cutting Timber.—"A. W.," Cecil Co., Md. We have found that timber cut when in full leaf, and not trimmed, but left with the leaves upon the tree until they are dried, will be more durable than when the trees are cut in the winter. This is the case with pine as well as hard wood. In sawing into lumber an extensive wind-fall, which was blown down in August and lay for several years, the timber was found perfectly sound, while some logs which were cut in the winter, and lay for two years only, were considerably affected with dry rot. If the logs are thrown into water soon after they are cut, the lumber is much improved as to durability, and will season very quickly after it is cut.

Basket Items continued on page 317.

A House Costing $8,000.

BY S. B REED, ARCHITECT, CORONA, LONG ISLAND, N. Y.

These plans were designed for a large and convenient house, arranged to embrace nearly all of the modern improvements. Figure 1 is the perspective, engraved from a photograph of a house recently built from these plans, for Mr. J. M. Peck, at Flushing, L. I. The general characteristics of the exterior are expressive of refinement and cheerfulness. There is considerable novelty in some of the outlines and details of construction. It will be seen that the Tower is five stories high, or two stories above the attic of the main house, affording a lofty outlook. All the long horizontal lines of

Fig. 1.—PERSPECTIVE VIEW OF HOUSE.

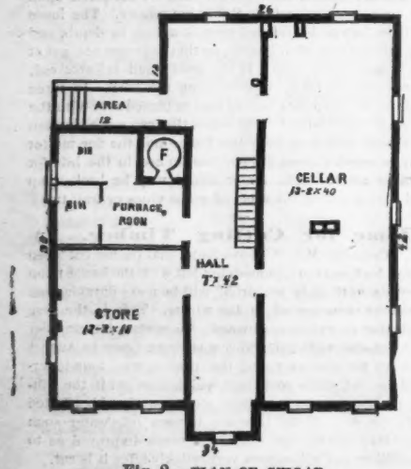


Fig. 2.—PLAN OF CELLAR.

cornice are broken up by truss-heads, which are ornamental in themselves, and give relief from the depressing appearance of such long lines. The Dormer Windows of the main house have projecting pediments, with turned columns resting on the outer edge of the main cornice. The Inclosing of this house is the same as that described in the last number of the *American Agriculturist*. The Mansard part of the main roof and tower is covered with dark slate, laid on sound boards, covered with felt. All other roofs are tinned in the best manner....The **Cellar** extends under the whole house, and has outside and cross-walls of hard brick, which, with the chimneys and area, are built as described last month, (page 253.) A *Furnace* is put in at *F*, and enclosed with brick, and 10-inch tin pipes are provided to convey hot air to the parlors, library, dining-room and hall of the first story, to five rooms in the second story, and to the tank-room in the attic story....The **First Story** contains a large Hall, Parlor, Library, Dining-Room to be used as a Living-Room, Kitchen, Butler's and other Pantries, Wash-room, two flights of Stairs, the principal one in the main hall, and a private one adjoining the wash-room. The Main-Hall is 7 feet wide, and is entered from the piazza through heavy front and vestibule double doors. The Front Doors are full hight, and have quarter-circle plate glass "sky-lights" in them. The Vestibule Doors have plate glass upper panels, with transom, and half-circle head-light. Double Doors open from the hall to the parlor and to the dining-room, and large Sliding Doors separate the parlor from the library. The *Dining-Room* has a large Bay-Window, Marble Mantel, China Closet, and adjoins the butler's pantry. The *Kitchen* is arranged with such conveniences as would delight the most enthusiastic housekeeper; has large Closets, Range, Sink, cold and hot water, adjoins the wash-room, cellar stairway, and private passage, and communicates with the dining-room through the butler's pantry. The Range has an elevated oven, warm closet, and water-back. To secure a perfect ventilation, a large register is placed in the flue of the chimney, which creates so strong a draft that the air in this room can all be changed in a few minutes. The left-hand flue of the kitchen chimney contains the pipes that convey warm air from the furnace to the bath and tank rooms. The Wash-room contains the copper boiler and wash tubs, and has a closet under the private stairs. The Sink is large, and is provided with large drain-boards at each side, and a row of closets underneath. The Butler's Pantry has complete fittings of drawers, shelving, oval copper wash-tray, and washstand with marble top, and is provided with cold and hot water. A Passage or private hall is arranged to connect with the principal hall, kitchen, private stairway, and rear entrance; by this plan the principal housework can be done without intruding in any way on the main hall or principal rooms of the house....**Second Story**—This story contains a good sized Hall, 4 large Chambers, a private Study, Bath-room, Store-room, six large Closets, and private Stairway. The principal flight of stairs is made continuous from the first floor to the attic; an arch is placed across the narrow part of the hall in this story, near the first landing of the principal stairs, and is in full sight from the hall below, imparting a cheerful and finished appearance....**Attic,** *or Third Story*—This Story is finished throughout, and is divided into a Hall, two large Chambers, with Closets to each, Tank-room, and large Attic. The Stairs to the tower are closed in, and have a door at the foot. The hall is lighted through a sash-door from the tank-room. The large attic-room at the right has two doors opening from the hall, and may be divided into two rooms if required. A large upper room, where noise will not disturb the occupants of the lower parts of the house, will always be found valuable for school and play-room purposes,

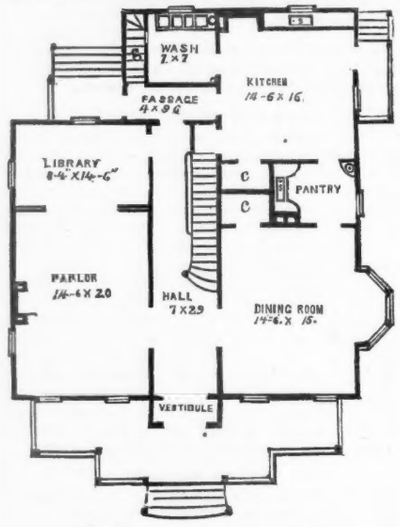


Fig. 3.—PLAN OF MAIN FLOOR.

especially in cold or stormy weather, and when supplied with a table, benches, maps, books, and apparatus for instruction and entertainment, will afford the younger members of the family opportunity for development and exercise....**General Remarks.**—Many people, who would adopt this general plan, might conclude that the style of the exterior is too elaborate and costly. It must be obvious to any one that the internal arrangements, and ground plan of houses, should be made to conform to the necessities and requirements of those who are to occupy them; and these parts being of the first importance, should receive the first consideration. Such *ground plans*, however, do not decide, or even indicate, the style,

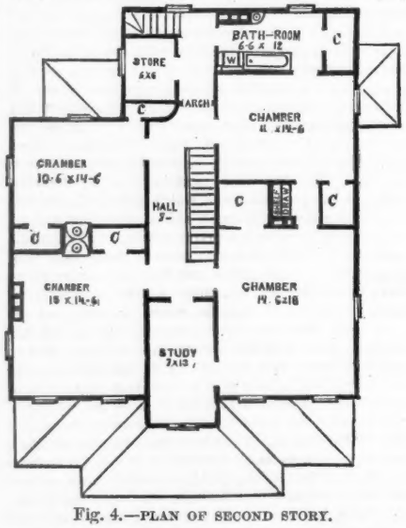


Fig. 4.—PLAN OF SECOND STORY.

character, or expense, of the outside *dress* that may be put upon them. Different people have entirely different characters, tastes, and resources, and the external appearance of their homes, should signify those general qualities and characteristics, and also

accord with, and conform to, all the circumstances of location, and relation....The **Estimate** in detail provides for all work to be done in a substantial manner, of the usual materials. The exterior and interior wood finish is of clear pine lumber. The *Plastering* is hard-finished, on two coats of brown mortar. Appropriate *Cornices, Centers,* and *Panels,* in stucco, are intended for the hall, parlor, library, dining-room, and the two front chambers in the second story. *Gas*-pipes are inserted in the frame-work of the house, with connections arranged for 37 attachments. These are easily put in during construction, and even when the house is located far from any city or village having gas, there is strong probability that ere long we shall have convenient apparatus for making and supplying gas to isolated dwellings....**Plumbing** is provided as described in the last *American Agriculturist,* except that the plumbing required for the butler's pantry is here added. *Bells* are put in, with their wires running through zinc tubes concealed in the walls.

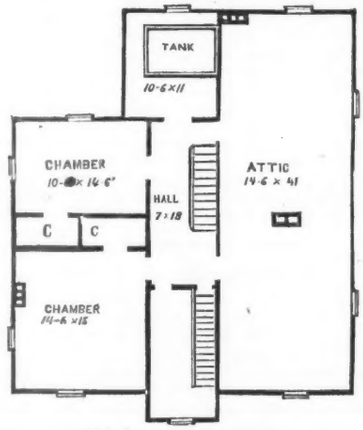


Fig. 5.—PLAN OF ATTIC.

The front-door pull leads to a gong in the kitchen. The dining-room has a bell leading to the schoolroom in the attic. Each chamber, in the second story, and the bath-room, has a bell leading to the kitchen, and the largest chamber has a bell leading to the attic. *Speaking*-tubes are provided for communication between the second story, hall, and bath-room, with the kitchen....**Painting.**—The body of the outside is in warm-gray; the principal outside trimming in pure white, with thin separating lines in light drab, and blinds in dark-bronze color. All wood, tin, and brick work, usually painted, both inside and outside, has two coats of the best lead and oil. All doors are grained—and all hard-wood, such as stair-rail, balusters, and door-saddles, are rubbed in oil.

216 yards Excavation, @ 30c. per yard	$61.80
32,000 hard Brick, @ $9 ₱ 1000	288.00
6,000 pale Brick, @ $5½ ₱ 1000	33.00
Materials for Plastering, and Lath	300.00
70 feet Stone Steps and Coping, @ 30 c.	21.00
Labor for all the mason work	600.00
13,258 feet Timber, @ 2¼c. per foot	298.30
viz. 1 Sill, 4x8 in. x242 ft. long. 12 Posts, 4x8 in. x36 ft. long.	
1 Tie, 4x6 in. x 484 ft. long. 1 Plate, 4x6 in. x 360 ft. l'g.	
2 Posts, 4x8 in. x 42 ft. long. 112 Beams, 3x8 in. x16 ft. l'g.	
2 Posts, 4x8 in. x19 ft. long. 56 " 3x8 in. x22 ft. l'g.	
1 Deck Plate, 3x8 in. x156 ft. l'g. 32 " 3x8 in. x12 ft. l'g.	
6 Hips, 3x10 in. x 22 ft. long. 28 " 3x8 in. x 8 ft. l'g.	
1 Sill, (Piazza) 4x7 in. x114 ft. 8 " 3x8 in. x18 ft. l'g.	
1 Plate " 3x8 in. x 90 ft. 53 " 2x6 in. x13 ft. l'g.	
1 Beam " 3x6 in. x 60 ft. 1 " 2x7 in. x28 ft. l'g.	
300 Joist, 3x4 inches x 13 feet long, @ 22c. each	$66.00
350 Wall Strips, 2x4 inches x13 feet long, @ 16c. each	56.00
928 tongued and grooved Sheathing boards for sides and roofs, @ 25c. each	232.00
300 pounds Tarred Paper, @ 5c. per lb	15.00
663 Novelty clear Siding Boards, @ 30c. each	198.90
416 feet main Cornices, Water Table, Corner Boards	416.00
29¼ Squares of Tin Roofing, @ $10 per square	295.00
17 squares of Slate, (no openings allowed) at $10 p. sq.	170.00
13 Cellar Windows, complete, @ $12 each	156.00
1 Bay Window complete	100.00
30 Windows, first and second story, and Tower, complete, @$17 each	510.00
13 Dormer Windows, complete, @ $23 each	299.00
3 Piazzas, (except tinning,) complete	400.00
1 Balcony, (except tinning,) complete	35.00
1 Hood, (except tinning,) complete	50.00
480 Flooring Boards, 6 inch, @ 25c. each	120.00
160 Flooring Boards, 9-inch	46.30
Stairs, complete	200.00
14 Closets and Pantries, complete	150.00
50 Doors, complete, @ $15.20 each	760.00
4 Marble Mantels, complete	125.00
Furnace, and Range, (set and piped,) complete	400.00
Plumbing, complete	300.00
Painting	400.00
Carpenter's Labor, not included above	800.00
Cartage, average one mile	115.00
Total cost of materials and construction	$8,000.00

Science Applied to Farming.—VIII.

BY PROF. W. O. ATWATER, WESLEYAN UNIVERSITY, *Middletown, Conn.*

Saving and waste in feeding.—Value of Nitrogen in Food.

Several farmers have written to me, and others have called at our laboratory to talk about the value of nitrogenous foods for stock, and how to use them. And Mr. Harris in "Walks and Talks" for July, has almost thrown out a challenge for more experimental proof of some of the theories advanced in this series of articles. This is quite fair and right. No theory is worthy of acceptance unless it is based upon a solid groundwork of fact.

Mr. Harris feeds his sheep all the straw and cornfodder they will eat. But this is not rich enough to make them grow, or to fatten them as rapidly as he would like. "Now," says Mr. Harris, "what the straw and cornstalks lack, is nitrogen (albuminoids). To supply this, then, I should add materials rich in nitrogen, and since beans, peas, and malt sprouts contain about twice as much albuminoids as corn, they ought, if this theory be correct, to have double the value of corn for this purpose." But Mr. Harris has his doubts on this point, and wants to know "whether it has been really proved by actual experiments, that, in such a case as I mention, peas or beans are much more valuable than Indian corn?"

I am not aware of any experiments to test this special question. This is indeed one of the many problems for the solution of which Experiment Stations in this country are much needed. The evidence now at our disposal is rather of the cumulative kind, and is involved in certain general principles for which we have a great deal of experimental proof. One of these general principles is this: Economy in feeding requires that the rations contain food ingredients—albuminoids, carbo-hydrates, fats, etc.—in such proportion as correspond to the specific demands of the animals; otherwise there will be waste. This has been shown by many series of experiments in the European Stations. The following, performed under the direction of Prof. Henneberg, at Weende, in Germany, is an example: Two oxen, in good, moderately fat condition, at rest in the stall, were fed with rations such as were found to keep them in the same uniform condition, as shown by the scales. A certain ration, (I), was fed for a certain period, the weight of the animals and the amount and composition of food and excrement determined by accurate weighings and analyses. At the end of the period the food was changed, and another experiment, (II), begun, and so on through six months with eight sets of experiments.

Table **13** gives the rations fed out during six periods of the series, describing the materials of which each daily ration was composed, the amounts of nitrogenous and non-nitrogenous materials it contained, and the ratio of these to each other. The cost of each ration is also added. The prices at Weende, in gold, at the time, being for clover hay about $8.50 per ton; for oat and rye straw, $5.50 per ton; and for turnips, $2.15 per ton; and for rape cakes, $1.07 per cwt.

Table 13.

DAILY RATION PER 1,000 LBS. OF LIVE WEIGHT OF THE ANIMALS.

		Containing lbs. of: Albuminoids.	Carbo-hydrates (and Fats.)	Ratio of Albuminoids to Carbo-hydrates.	Cost of Daily Ration.
		lbs.	lbs.		
(I)	17.5 lbs. clover hay	1.95	7.39	1 to 3.8	9¾c.
(II)	11.4 lbs. oat straw, 45.6 lbs. turnips	.87	9.13	1 to 10.5	10¼c.
(III)	12.6 lbs. oat straw 25.6 lbs. turnips, 1 lb. rape cakes	.91	7.77	1 to 8.5	8¼c.
(IV)	3.7 lbs. clover hay, 13 lbs. oat straw, .56 lb. rape cakes	.99	7.16	1 to 7.2	7 c.
(V)	2.6 lbs. clover hay, 14.3 lbs. oat straw, .52 lb. rape cakes	.91	7.20	1 to 7.9	6¾c.
(VI)	3.8 lbs. clover hay, 13.3 lbs. rye straw, .57 lb. rape cakes	.99	6.82	1 to 6.8	7 c.

Looking down along the first column of figures we notice that ration (I) contained nearly 2 lbs., (1.95 lbs.), of albuminoids, while the others contained only about 9/10 lb. The 9/10 lb. of albuminoids in the other rations was sufficient. The clover hay ration served the animal no better than the straw and the extra pound of nitrogenous material was given, for maintenance of the animals, superfluous. In ration (II) we have the other extreme. The appropriate amount of nitrogenous material, as the column shows, 9.13 lbs. of non-nitrogenous material. The other figures in the second column indicate that the other rations averaged about 7½ lbs. of carbo-hydrates, and the oxen showed by their keeping in good condition that this was sufficient. In (II), therefore, nearly two pounds of non-nitrogenous matters were not utilized, they were wasted. We find, then, that about 9/10 lb. of albuminoids and 7¼ lbs. of carbo-hydrates sufficed to keep the oxen in good condition.

Could anything be more convincing than this? The oxen are in good condition, and hold their own with their rations of straw, to which enough clover hay and rape-cakes are added, to make 9/10 lb. of albuminoids, and 7½ lbs. carbo-hydrates. When enough turnips are added to the straw to make 9.13 lbs. of carbo-hydrates, (II), or when 17.5 lbs. of clover hay, with 1.95 lbs. of albuminoids, (I), was used, they did no better. During the course of the experiments, they did, in fact, gain a very little in weight, but this gain was too slight to be of any account, and was more perceptible with the other rations than with I and II.—From the fact that this excess either of albuminoids or carbo-hydrates, was without effect upon the production, which in this case could, to be sure, be nothing but increase of live weight, we infer that for each 1,000 lbs. live weight, a ration containing 9/10 lb. albuminoids and 7¼ lbs. of carbo-hydrates, was an economical one for the oxen at rest in the stall. The *cost* of rations (III–VI) containing the food ingredients in these proportions, averaged 7¾ cents. The clover hay, with its excess of albuminoids, cost 10¼ cents, or 40 per cent more, and that of straw and turnips, 9¾ cents, or 34 per cent more.

In the above calculation not the digestible but the total amount of albuminoids was taken into account. The ratio of actually digested albuminoids to carbo-hydrates, would probably be about 1 to 12.—This is only one of many series of experiments of this kind, that have been made at Weende and elsewhere, all of which agree in indicating that in food for oxen at rest in the stall, there should be about 1 lb. of digestible albuminoids to every 12 lbs. of digestible carbo-hydrates. And when the ratio varies widely from this, there is waste.

More about Nitrogen Ratios and Economy in Foddering.

The above experiments were made with animals from which no production was required, either in the form of work, or milk, or increase of weight in fattening. But other experiments show that oxen at work, milch cows, and fattening cattle, require food richer in nitrogen. Thus, for example, it is found that for milch cows, about 1 lb. of digestible albuminoids, to 5½ lbs. of digestible carbo-hydrates, is the economical ratio. And when the ratio varies widely from this, there is apt to be waste. This is illustrated by some experiments with milch cows, made by Dr. Kuehn, at the Station at Moeckern, in Saxony.

The custom of feeding cows on green clover was common about Moeckern. But clover is very rich, while straw is poor, in nitrogen. How would it do to mix the two?....Further, the question of *ad libitum* foddering, (that is, giving the animals all they will eat), was much discussed. Some said the cows themselves were the best judges of their wants. Others claimed they would eat more of such palatable food, as clover, than they would profitably utilize.—To test these questions, a feeding trial was made with four cows. During one period of several weeks, they received all the green clover they would eat. During another, a smaller ration was given, and a part of the clover was replaced by straw. The fodder and milk were carefully weighed and analyzed. Every precaution

was taken to insure accuracy. The rations in the two periods were as follows:

Table 14.	The Organic substance contained	
	Albuminoids.	Carbohydrates
	lbs.	lbs.
(I) 87 lbs. green clover and 6.7 lbs. barley straw	3.8	17.8
(II) 123 lbs. green clover	5.6	15.

The result was that the cows gave as much milk, and milk as rich in fat (butter) and casein with the smaller ration (I), of which a part was straw, as they did with the larger ration (II) of pure clover. The cost of the milk, as based upon the value of the fodder, was just about 50 per cent more with the clover alone, than with the mixture of clover and straw. The 3.8 lbs. of albuminoids was sufficient, and in the pure clover, with its 5.6 lbs., there was a waste. Part of this waste was due to the *ad libitum* foddering, but a part was due to the unnecessarily large amount of albuminoids in the green clover.

Now the bearing of all this on Mr. Harris' question is simple. To make of his straw a fit fodder for his sheep, he must not only add nitrogen, but he must add this in the right proportion. And it is clear that he will get this proportion with a smaller amount of beans or malt sprouts than of corn. Perhaps I may be able to give some tables of fodder mixtures for sheep.

Potato-Bug Notes.

Correspondence in regard to the Colorado Potato-Beetle is voluminous, and some of it rather amusing. We glean such matters as give information in addition to that in an article on page 304.

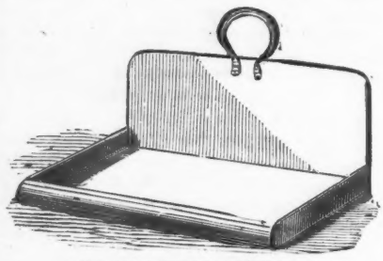
IS THE BUG POISONOUS?—There is sufficient evidence to show that under some circumstances it is, and that some caution should be observed. We have heard of no unpleasant results from merely handling them, but a case is reported to us in which the bugs being killed by squeezing between the thumb and finger produced swelling and other effects of poisoning. It is reported that a child was severely poisoned who mashed a large lot of bugs, one at a time, by means of two stones. Other cases have resulted from breathing the vapor from the bugs while scalding. The exhalation or vapor from the insects when bruised or heated, seems to be decidedly poisonous, and should be carefully avoided.

ANOTHER "ENEMY" TO THE POTATO.—A very intelligent correspondent in giving us an account of his experience with the Colorado beetle, informed us that he had found another enemy to the potato, more active, and consequently more mischievous than that. He sent us some specimens of his "new enemy" which we recognized as an old friend—the larva of one of the lady-bugs, which, with other insects, feeds upon the larva of the Colorado insect. It is a great comfort to know that as an insect increases in numbers, its natural enemies are likely to multiply, and in the western states there are a number of carniverous insects which prey upon the larva of the potato beetle. The Asparagus beetle, a few years ago, threatened to deprive us of Asparagus, but it is disappearing through the agency of other insects. It is well to remember that *all* insects are not injurious, and that in our warfare we should know our friends from our enemies. For fear that others may take a lady-bug larva for an enemy, we give an engraving which shows the general appearance of them. They are very active, and usually of a lead color, with a few orange-colored spots.

LADY-BUG LARVA.

CAUTION.—When the lady-bug larva is about to change into the perfect insect, it fastens itself to the potato vine, curls up, and appears as if dead. In this condition it may be mistaken by a careless observer for a sluggish larva of the potato-beetle of the same size, and picked off by mistake.

MECHANICAL MEANS are to be preferred to poison in destroying the bugs, unless they are so numerous through neglect that nothing short of Paris green can be of use. Hand-picking is slow, but sure, and if started in time and persevered in, will conquer them—but no half-way work will do. There have been several mechanical contrivances for catching the insects. A photograph of one was sent us from Pottsville, Pa., which is like a small hand-cart with an opening through the bottom; this is intended to straddle the rows, knock off the bugs, and catch them on tarred boards. As we have not seen it work, we can only describe it from the picture. In all such things the simplest is the best, and a very simple affair is shown in the engraving; it consists of a large tin or sheet-iron dust-pan, with a back to it, and the edge rolled inwards to prevent the insects when once in, from crawling out. It is 30 inches long, the other parts being in proportion. The operator takes it in one hand and a short broom or some kind of brush in the other, and passing along the rows, knocks or sweeps the beetles and the larvæ into it. Not having bugs enough of our own to give it a fair trial, it was taken to the field of a neighbor, where it worked admirably. The affair was left at our office by the tinsmith who made it, but who



PAN FOR CATCHING POTATO-BUGS.

did not leave his name.....Still simpler is the plan of D. O. Crum, Portage Co., O., who makes a paddle of a shingle, which he takes in one hand, and in the other a large tin pan, like a dish-pan, and by the use of the paddle knocks the bugs from the vines into the pan, and then kills them. He says that he does not think there is two pounds of Paris green used in the county. But the insects are never so bad after the first year or two.

THE USE OF PARIS GREEN.—Many prefer to apply the Paris green dry, mixed with flour, as it adheres better than when stirred with water, (see page 226, June last). Mr. L. B. Goodwin, Rock Island, Ill., sends us a method which we have not seen published. He makes flour paste as for putting on wall-paper; one pint of this is added to a pailful of water, and then a tablespoonful of the green is put in and all mixed very thoroughly. The vines are sprinkled with this mixture in any convenient way; our correspondent uses a wisp of straw or an old brush, and sprinkles his vines. This strikes us as a very sensible suggestion, as the paste in the first place prevents the poison from settling so rapidly as it would in clear water, and it sticks the poison to the plant, preventing it from being blown away. Thanks, Mr. G.

WILL THE TUBERS BE POISONED?—This question comes up very often from eastern correspondents. In the western states where Paris green has been used so long, they do not need to ask. So far as negative evidence can go, we say most decidedly *no*. It is true that we use a most deadly poison, and the fact that it is dangerous and deadly, should always be kept in mind, but we also know that plants are very sensitive to the action of poisons, and should any virulent poison come in contact with its roots, the potato plant would be killed. The fact that the plant remains perfectly healthy, shows that it does not take up the poison; it could not take up enough for the poison to be manifest in the tubers without being itself killed in the attempt. The amount applied to the square foot is so very small that no danger need be apprehended. A city near New York is said to be considering a law to prevent the sale of potatoes raised by farmers who use Paris green. The effect of this foolish law would be to encourage lying, and shut out farmers honest enough to admit that they did use it. Besides, in this very place potatoes have been sold for several years past, which came from western localities, where the green is used, and no one has been injured.

WILL NOTHING ELSE KILL THEM?—We are frequently asked if nothing but Paris green will kill the potato-beetle. Undoubtedly any other equally virulent poison will destroy them, but for ten years intelligent cultivators from Kansas and Missouri eastward, have been experimenting, and have found that no less mild remedy is of any use, and have fixed upon Paris green, as of all the poisons the most effective as well as the most manageable, and at the same time the cheapest. We know what Paris green is—its danger, and all about it—while its color is likely to prevent any accidental use of it. We do not countenance the use of any secret remedies for the reason that they can be no better than Paris green, and their composition not being known, accidents may occur. One of these, which we know to be arsenic in some form, is a white powder, and for that very reason all the more dangerous to have about. We will not advertise such things, and will not in any manner countenance the use of any secret application to plant, insect, beast, or to man, so we say let all secret preparations alone. Do not use any poison until it is manifest that hand picking and other mechanical means are of no avail, then use Paris green with the full knowledge that it is one of the most dangerous of all poisons.

Oleo-Margarine Cheese and Butter.

It is about two years since the preparation of tallow, known as oleo-margarine, was brought to the public notice, and offered for sale as butter. Then the *American Agriculturist* took strong grounds against it as a fraud upon the consumers of butter, and a dangerous thing for dairymen to touch, and advised dairymen, produce dealers, and consumers to avoid it. Since then this stuff has been largely used to mingle with skim-milk for the manufacture of cheese, and some dairymen have unfortunately been led into the most surprising advocacy of this adulturation by officers of the Dairymen's Association and a University Professor, to enter into the manufacture of this fraudulent article. As pointed out two years ago, and often since, the public refuse to eat this trash; the markets are consequently overstocked with it, and prices for genuine cheese are borne down by the pressure of the unsalable adulterated article. The wholesale produce dealers are now very bitter against the "oleo-margarine," and many manufacturers doubtless feel equally bitter against those who induced them to make the unsalable cheese. The verdict of the public, however, will be, "served them right," for those who undertake to adulterate food, and those who encourage the attempts to do it, are both deserving of censure, which the public will not be slow to inflict upon the delinquents. In self-defence those factorymen, who make genuine butter or "full cream" cheese, should take means to prevent this unfair and injurious competition, by procuring the passage of a law to prevent the sale of adulterated cheese or butter, except it be conspicuously branded, and represented openly as what it really is, a mixture of milk with beef-tallow, cotton-seed oil, horse-fat, or whatever other ingredient may be used in the adulteration.

A Plowing-Match at Mineola.

After long continued efforts made by Mr. Crozier, of Beacon Farm, a plowing-match association has been formed, and the handsome sum of $250 raised with which to offer attractive prizes. Mr. Crozier, as is well known, is an enthusiast in regard to plowing, and spares no expense to procure the best implements. If he can infuse a like spirit into his brother farmers, much good would undoubtedly result. The match came off at Mineola, L. I., in connection with the Queens Co. summer exhibition, on June 24th and 25th. A number of plows were entered, and some excellent work was done. The first prize, a silver cup, value $100, was carried off by Charles McKay, one of the Beacon Farm plowmen, with a Scotch lap-furrow plow, made by Thompson, of Scotland. Edward Small, of Long Island, gained the first prize, a silver cup, value $50, for flat-furrow plowing; the plow used was a Collins No. 3 steel plow. The Ames Plow Co. took the prize for swivel plows, and sod and subsoil plows. In double-furrow plowing the premium was gained by George Aiken, from the Beacon Farm, with one of Gray & Co.'s (of Glasgow, Scotland,) double furrow iron plows. The Deere Gang-plow was highly commended, and did excellent work. In stubble-plowing John Small, with the Collins plow, took the prize; John Collins, who competed with him with a Deere G. P. No. 5 plow, lost the prize by only one badly turned furrow, made by the swerving of the team at the finish. It is greatly to be hoped that plowing-matches, now so rare, may become general, and lead to a great improvement in the ordinary style of plowing.

Ogden Farm Papers.—No. 66

BY GEORGE E. WARING, JR.,

Recent investigations into the state of the art of house-drainage and sewerage, have brought to my notice an English invention that seems to be of great value. It is shown in figure 1, and is called a "self-acting flush-tank," (the invention of Mr. Rogers Field, of London). It is intended for use at the outlet of a house-drain, and wherever possible, is best placed close to the waste-pipe of the sink, outside of the house, where it will answer as a grease trap, and prevent the choking of the drain beyond by the congealing of fatty matters. For this purpose the whole apparatus is made of earthenware, consisting mainly of four pieces—*A*, the reservoir; *B*, the grating or screen, and a trap for preventing the escape of foul smells; *D*, a siphon, and *F*, the beginning of the outlet—so arranged that the siphon will be readily brought into action, when the tank is filled, by the addition of a small quantity of water. An important acces-

sory is the pipe, *C*, which is a ventilator, carrying the foul gases to the top of the house, by connecting with the main water conductors. In use, all of the water reaching this apparatus, after being screened of its coarser materials, by the grating, *B*, flows through the trap into the reservoir *A*, where it rises until this is entirely full, and where its heavier parts settle to the bottom, and its grease becomes cold and floats at the surface. When the

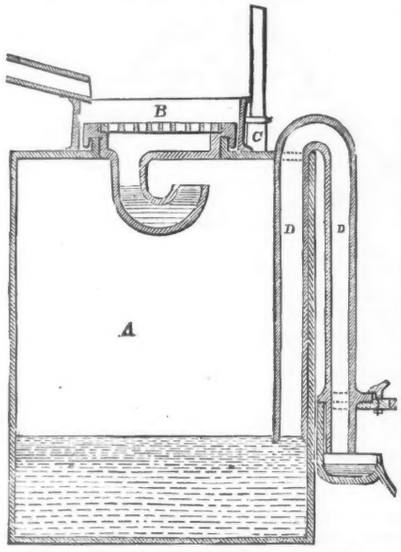


Fig. 1.—FIELD'S SELF-ACTING FLUSH TANK.

reservoir is quite full, the pouring in of a single pitcher of water, sets the siphon in operation, and it continues to flow, full bore, until the contents of the reservoir are lowered to the level below which heavy matters are allowed to accumulate—the cover *B*, being occasionally removed to scoop them out. The drain leading from the outlet, *F*, may be connected with an under-ground drain, sufficiently deep to allow the whole apparatus to be buried out of the reach of frost, the grating, *B*, being a foot or

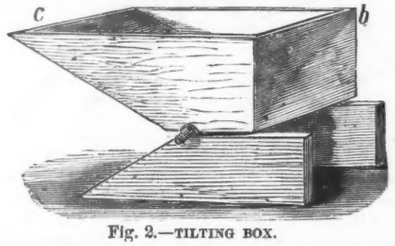


Fig. 2.—TILTING BOX.

so under ground, in a recess having a movable cover. The outlet may be brought to the surface, or into connection with irrigating pipes near the surface, at such distance from the house as the inclination of the land will allow.

The great annoyance in connection with the drainage from small establishments, and notably from a kitchen sink, arises from the fact that the stream is usually only a small trickling one, which has no power to carry away impurities, and wash out the drain, and which sinks into the soil at the first open joint, slowly fouling a considerable area, and constituting a source of real danger in hot weather. This effect is also much aggravated by the congealing of hot grease, which will sooner or later accumulate sufficiently to choke a pipe of any size. With the use of the flush-tank, as there is ordinarily no flow of water at all through the pipe, any fouling of the ground from the liquid has time to become perfectly dry and aërated, and during the periodic flow the whole mass is carried forward in a cleansing stream, to any point of discharge that may be selected. This apparatus is not now to be obtained in this country, but a supply would soon be produced did a sufficient demand exist for it. The cost of importation of single specimens between $25 and $30 is altogether too high for ordinary use.

The importance of any complete device that will lead to the reform so much needed in the arrangement of house-drains throughout the country, especially in the case of farm-houses and country residences, is so great that this of itself makes it eminently necessary to describe this method in these papers; but the principle upon which this apparatus is based, has another and more purely agricultural application, which I especially desire to bring into notice; and I can, perhaps, best accomplish my purpose by describing the conditions existing at Ogden Farm, and the manner by which it is proposed to overcome them with the help of a similar device.

Our barn cellar, which is the manure cellar, 40 feet by 100 feet, is dug into a heavy clay soil, having some porous strata, which bring water to it in every heavy rain. The consequence is, that, in order to keep it even tolerably dry, we have had to lay a deep underdrain delivering on to the land some distance away; and here, for a short distance, the small outflow over-saturates the ground, producing an enormous growth of rank grass, of little value, and constituting, practically, a waste of some of the very best of our manure. Could this intermittent flow be stopped, and the whole volume discharged rapidly, with force enough to carry it over several acres of land, by means of surface irrigating gutters, we should get a great advantage in place of what in now a real disadvantage. The plan that I propose is this: To wall up a cistern in a corner of the cellar, about 10 feet square, and 7 feet deep, carrying a 4-inch siphon pipe from a point within a foot of the bottom of this, over the partition wall, delivering by a cemented connection, into the present underdrain, which is large and good. I shall place a small windmill on the barn, to work a pump in a depression in the cellar, to which all liquid will flow, pumping all of this liquid manure into the new cistern. Then, whenever this is full, the siphon will be set in operation, and it will flow steadily and copiously until emptied. As the amount of water delivered by the pump, would be at no time great enough to fill the siphon and start its working, I shall adopt the plan shown in the accompanying illustration (figure 2) for delivering the liquid to the tank in large quantities, and at intervals. Whenever the tilting box is filled, it will discharge its contents at once. I am confident that this plan for getting rid of the cellar water, will relieve us perfectly of a difficulty that has seemed insurmountable until the account of the flush-tank suggested a means for overcoming it. This arrangement will not only enable us to keep the cellar dry, and to make profitable use of the cellar water that is now troubling us, but we shall be able to extend this manner of using our manure up to the full requirments of the land we are thus enabled to irrigate; for we have already a copious supply of water from another windmill, which we can at any time turn into the cellar, and so increase the amount of the liquid available for irrigating use. Of course this particular arrangement will be unsuited to many other cases where a corresponding difficulty is felt, but I am confident that the siphon tank offers a suggestion which may be very wide and general in its application.

I described, last year, the drainage of a swamp in Massachusetts, by a long and deeply laid 6-inch drain, having a bell or funnel-shaped mouth, for the admission of the water at the upper end. The work was completed late in the summer, and the whole apparatus worked perfectly. I had been assured by an engineer in the neighborhood, that nothing less than an eighteen-inch pipe could carry the water of so large a district subject to frequent heavy rains; but with the heaviest rain fall that has been known for years, the capacity of the pipe has been quite ample for its work; in fact, the water flowing from the mouth of this six-inch pipe, after the storm, made an angry looking brook three feet wide, and more than a foot deep. It seemed impossible to believe that such a volume of water could have proceeded from so small a channel; but the velocity in the pipe was exceedingly great, and the flow became retarded by the rough sides and bottom of the channel into which it was discharged, the decreased velocity of course enlarging the size of the stream. Another difficulty, however, which was anticipated at the outset, has shown itself to be formidable. The swamp is a circular one, surrounded by high land, and has evidently been at some time a deep lake. We were able to procure no pole of practicable size, with which we could reach the bottom, and an area of several acres trembled at a heavy tread, so as to ripple the water in the ditches throughout the whole extent. In fact, the soil of the swamp consisted of only partly decomposed roots and flags, in the condition of a sponge, distended by saturation with the water, and as fast as the water was withdrawn, the sponge dried and contracted, and although we lowered the water in the ditches four feet, the surface of the ground has settled to very nearly its present level, so that a large part of the swamp is just as badly off as ever. The drain was made as low as practicable without inordinate expense, and while it suffices perfectly for the removal of all the hill water flowing into the ditch, (which entirely surrounds the swamp), we have to adopt some further means for draining the swamp itself.

Remembering my observations of drainage works in Holland, (similar, though on an enormously larger scale), I have concluded to make what the Dutch call a "polder," of this swamp; throwing up a low dyke at the inner bank of the encircling ditch, so that under no circumstances can spring floods break in upon it, and to provide a sufficiently deep outlet for the enclosed area, by artificial pumping. The area of the swamp, inside of the ditch, is about six acres, and I shall provide for giving this an outlet, if necessary, at a depth of fifteen feet below its present level, digging a well near its present outlet, with a pump having the capacity of a two-inch pipe, and arranging to admit the main ditch of the swamp at lower and lower levels, as it becomes necessary to deepen it. With the arrangements already made, the cost of providing this outlet, pump, windmill and well, will not exceed $250, and the land, when once laid dry, ought to make meadow land of the first quality, worth, in that neighborhood, $250 per acre. I state the case and describe the process at this early day, because the season is close upon us, when others, having similar work to perform, should set about it, and I have seen enough of such operations abroad, to make me confident in recommending this method. It will probably take a year or two for the land to settle and become firm, but I shall report progress.

A correspondent in Pennsylvania writes: "I wish to know how many acres of rye it will take to keep twelve cows, with the help of twelve acres of good pasture, until sowed corn is fit to cut, putting in the corn as early as possible; and how much corn will it take to keep them until cold weather comes on? What time this fall should I sow the rye?"

Rye will not go very far toward carrying cattle through from the first green of the spring, until corn-fodder is ready to cut, for the reason that it grows so rapidly, and becomes so soon hard and unpalatable. However, as in this case there is a fair amount of good pasture, the rye will only be needed as an accessory. Two or three acres will be enough, if the land is even tolerably good. The seed should be sown about the 10th of September. Then, with a fair growing season, the rye will afford a good nibble in November, and if it is well set, it will bear pretty thorough feeding off, (in dry weather), even after heavy frosts have checked it. It should not be pastured in the spring, unless it is to be kept for pasture altogether, but it should be used for soiling, the mowing being begun when the blades have reached the length of 8 or 10 inches. Its growth at this time is very rapid, and all that is cut off before the flowering shoots appear, will make nearly as full a crop as that which has been left undisturbed. If a larger area is sown—say five or six acres—it may be pastured pretty steadily up to the 1st of July, but this is a wasteful system as compared with the use by soiling. In either case a small field of rye would be a great help to the pasture, and there should be no difficulty, by the system proposed, in carrying the stock through in good condition to corn-fodder time. Three acres of corn-fodder will be ample for 12 cows.

I have a letter from Mr. S. R. Gridley, of Bristol, Conn., who is one of the oldest breeders of Jersey cattle in the country, and who comes to my aid in the attempt to dissuade breeders from deferring to a very modern, and, it seems to me, a very absurd fashion, that sprung up a short time ago, in favor of solid (or uniform) color. Mr. Gridley says: "I will say that, twenty years ago, when I first commenced breeding this kind of stock, they were nearly all fawn and white. Mr. Buck had some black and white, Mr. Taintor's were fawn and white, (what he called 'patchy'), and Mr. Norton's were French-gray and white. L. C. Ives and Geo. Beach had each a fawn and white cow, *white enough to condemn them at the present time with the modern breeders*; still the former made 17½, and the latter 17¾ lbs. of butter per week. Then a solid-colored Jersey was looked upon with suspicion. Even as late as 1860 I bought one of Daniel Buck; she was dark-fawn, with black points, (a gentleman from eastern Connecticut, who said that he had visited the Island of Jersey, denounced this solid-colored cow as an impure Jersey), the first that I ever heard of the full black-point merit, I was informed that it was the 'peculiar taste' of Mr. J. P. Swain, and I have no disposition to deprive him of his taste. Still the best Jersey cows I have ever seen, were *not* all of one color. It is true, I have two or three solid-colored cows, and ask more for them, as they are *fashionable* colors."

Mr. Swain can not be accused of originating this notion, which I believe to have been entirely a creature of the Messrs. Fowler, the principal English dealers in Jersey cattle. Their purpose in resorting to the dodge is, I think, sufficiently clear; and Mr. Swain, I fancy, adopted it from its supposed bearing on one of his favorite theories concerning the buffalo origin of this race of cattle. It seems to me that the best presentation of the case has been made by a correspondent of the Country Gentleman, who compares the black tongue and black switch mania, to the way's suggestion that Horace Greeley, in "What I Know About Farming," said that the best broom-corn seed to plant, was that which had a black stripe around the handle. Logically viewed, I think the two cases are fairly parallel.

What is Asbestos?

It frequently happens that a substance which has only been known in the laboratories and in the cabinets of scientific collectors, is put to some new use, and at once becomes an article of general interest. This is the case with asbestos, of which specimens were regarded as remarkable mineral curiosities, but the applications of which were very limited until a few years ago, when its incombustible and non-conducting qualities were turned to account in various ways by Mr. H. W. Johns, who has set the word before the public so prominently, that there is a general desire to know something about the material. It has already been hinted that asbestos is a mineral, and one not very familiar with minerals, would be surprised to find in a well arranged collection, that some black glassy-looking

Fig. 1.—FILAMENTS OF ASBESTOS.

crystals with well marked angles, labelled hornblende, occupy a place very near some pure white specimens, with a fibrous appearance, and a satiny lustre, which do not look like a mineral at all—asbestos; if the collection is at all full, there will be fibrous masses like figure 1, of yellowish-white, and though soft and flexible, have no luster, and specimens like fig. 2, in which the fibres are distinctly seen, but are compacted closely together.

Much of what is called asbestos, is a variety of the very common mineral *hornblende*, which in its most perfect form, exists as handsome black crystals. These minerals, hornblende and asbestos, so unlike in appearance, are placed near together on account of their similar chemical composition, which is mainly silica, magnesia, and lime, with a small amount of iron in some. Asbestos gets its name from Greek words, meaning unchanged by fire, as it is not affected by any ordinary heat. The common acids do not attack it, hence it is of use in the chemist's laboratory for various purposes, such as filtering acids. The non-combustible properties were known to the ancients, who made a cloth from it in which the dead were wrapped preparatory to burning, and in which the ashes of the body were saved; they also employed it for lamp-wicking. Among the minor uses to which asbestos has been put, is that of making gloves for the use of those who have to handle hot iron. The finer kinds, which are pure white and silky, are comparatively rare and expensive, while the colored and more compact forms are quite abundant, and are found in various parts of the country. Some of the largest deposits being controlled by Mr. Johns, who, at his factory, reduces it to various degrees

Fig. 2.—SOLID ASBESTOS.

of fineness, according to the uses to which it is to be put. The largest quantity is consumed in preparing roofing material, for which the material is reduced to a kind of flock, and forms the basis of a compound which is applied to a strong canvas. This is nailed upon the roof, and afterwards painted over with Asbestos Roof-Coating, which consists largely of the mineral. Various non-conducting articles, such as felt, board, cement, etc., for protecting wood-work which is exposed to fire, are made largely of asbestos, and are also used to cover boilers and steam-pipes to prevent the loss of heat. The material has also been employed in making fire-proof safes. One of the most recent applications of asbestos is in the making of steam-packing, to use around the piston-rods and other moving parts of an engine, where a steam-tight joint is needed; for this purpose it is spun into ropes of different sizes. Indeed so many uses have been found for what was not long ago a nearly worthless substance, that we shall by and by wonder how the world managed to get along without asbestos.

Extension Ladders.

BY L. D. SNOOK, YATES CO., N. Y.

Extension ladders are useful for various purposes, especially about a farm, yet not one farmer in ten has an extension, or even a common ladder of sufficient length to reach the roof of his buildings in case of fire or any accident requiring their use. A ladder of 25 feet or more in length is a cumbrous affair for common use, while one of 14 feet and one of 16 feet may be easily handled, and are the most desirable lengths for general use, and two ladders of the above lengths are easily converted into extension ladders at will. The side-pieces of ladders should be straight grained, and free from knots or any decay. A pole of chestnut or pine of suitable size, when split or sawed, is preferable to sawed pieces obtained at the mill. Connecting rounds or rungs should not be less than 1¼ inch in diameter at the ends, enlarging as they approach the center, and made of the best and toughest seasoned wood to be obtained. In fig. 1 the top rounds of each ladder serve as a hinge, and the figure shows the ladder partly folded; when opened, the ends of one, *H, H*, rest against the round, *E*, of the other; small rivets or bolts should pass through the ends near *H, H*, to keep it from

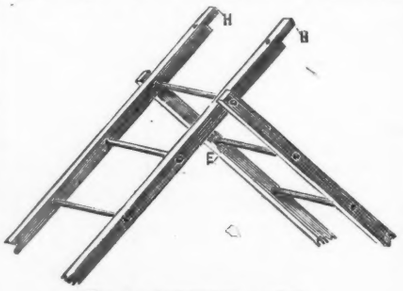


Fig. 1.—EXTENSION LADDER.

splitting. Fig. 2 shows a more desirable plan, in which *A* is an iron band or clasp that is placed upon the side-piece, *X*, and when the ladder is extended, slips down over the end of side-piece, *S*, as far as the round *M*. Both sides being thus made, the ladder can be turned over without becoming disengaged. Both ladders, when partly folded, make a good, serviceable step-ladder for picking fruit, etc. In making the one shown in fig. 3, place the rounds an equal distance apart, say 14 inches, then exactly two inches below each round, bore a half-inch hole in the opposite direction, as shown at *P, P, P, P*, so that when the end of one ladder is lapped over the other, the holes will be directly opposite; you can then make them of the desired length, by uniting them with four one-half inch bolts, *B, B, B, B*, furnished with easy turning or winged nuts. The coupling of this ladder takes a few minutes' time, but it is perfectly safe when

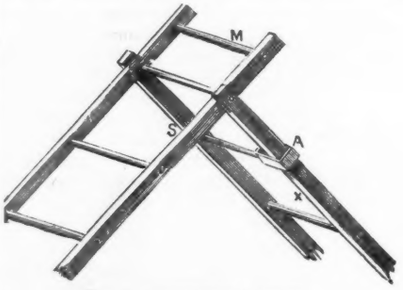


Fig. 2.—EXTENSION LADDER.

properly united. The upper, lower, and middle rounds of long ladders should be one inch thick, and two-and-a-half or three inches wide, projecting and keyed at the ends, as shown at *T*, which prevents spreading apart. Ladders should be painted and kept under shelter when not in use. Farmers should also have more stationary ladders about their buildings, especially the barns, giving easy

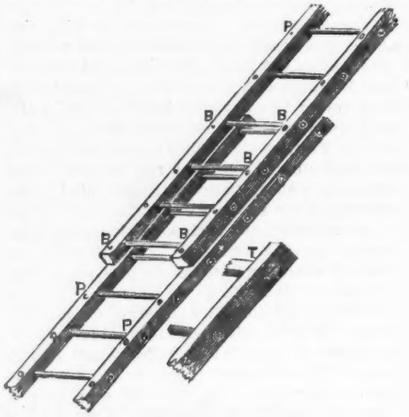


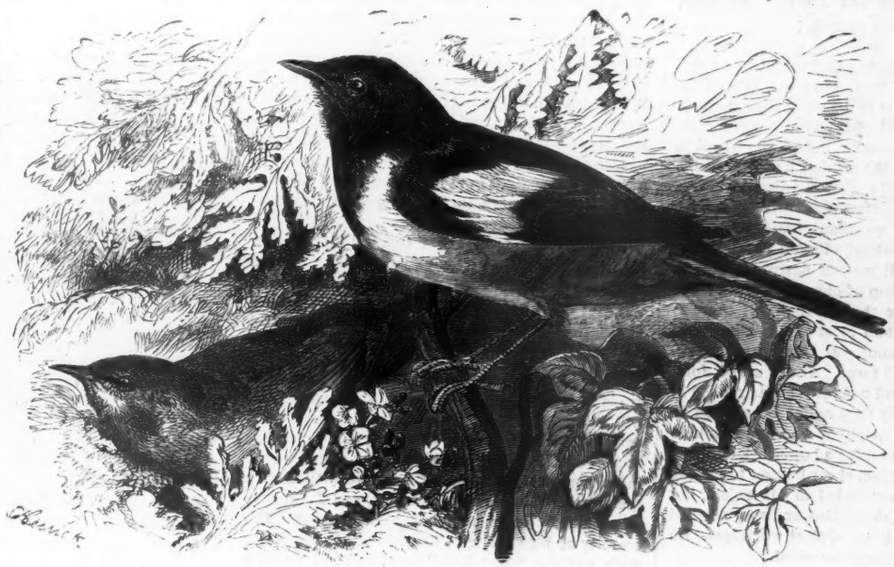
Fig. 3.—EXTENSION LADDER.

access to the most frequented parts of the loft, without incurring danger to life and limb.

The Esquimaux Dog.

In all arctic countries the dog is a most valuable domestic animal, as it is the only one that can be used for transportation; in those regions, where there is almost no vegetation, only carnivorous animals can be kept, and the dog is the only one of these that has been domesticated and trained to work. It is a notable fact that the dogs of savage and partly civilized peoples, show a very strong resemblance to the wolves of those countries, and so nearly related are the Esquimaux dogs to the Canada wolf, that it is difficult to find any certain marks of distinction between them. A pure white Esquimaux dog, recently imported, attracted considerable attention at one of the English dog shows, a few months ago, and had its portrait, which is here reproduced, published in "The Country," as the finest specimen of its kind that had been seen in England. These dogs are usually brindled, and a pure white one is regarded as of especial value. The following are the measurements of this remarkably fine specimen: Hight at shoulder, 2 ft. 6 in.; length from center between shoulder blades to center between ears, 1 foot; from latter point to end of nose, 11 in.; length from shoulders to setting on of tail, 2 ft. 7 in.; length of tail, 1 foot 4 in.; measurement round head just behind ears, 2 ft.; just above eyes, 1 foot 8 in.; at point of nose, 10 in.; his girth measured fairly tight, not outside the hair, 3 ft.; his weight is 120 lbs. Like other Esquimaux dogs, this one does not bark, but when angry or hungry, gives a howl precisely like that of the wolf. This animal is very tame, following its master, and showing no signs of its wild nature, which may be due to the fact that it is well fed. Among the Esquimaux the dogs are scantily fed, and receive no other caresses than those given by the end of a six-foot seal-skin lash; but notwithstanding they are hard worked, and brutally treated, they are much attached to their masters. The chief distinctions between these dogs and the wolf, are that the wolf has a more oblique eye than the dog, and that it carries both head and tail down in running, while the dog runs with head up, and the tail curled over the back; yet Dr. Kane states that he has had in his teams, dogs which had all these wolfish characteristics, and that he has more than once mistaken a pack of wolves for the dogs of a party of Esquimaux.

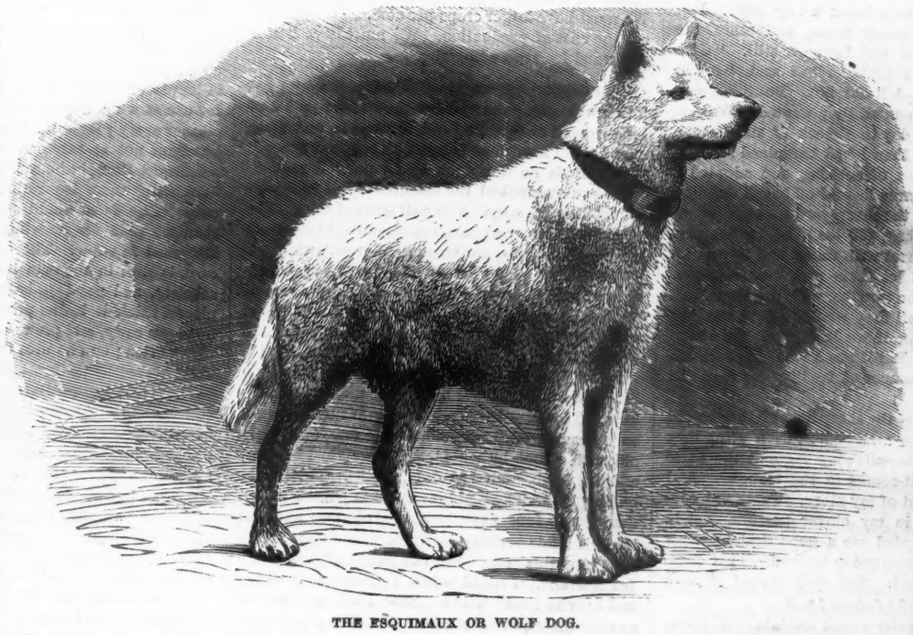
That the Esquimaux dog is very closely related to the wolf, is shown by the fact that they will breed with wolves, and it is said that the Indians cross their dogs with the wolf, to improve the breed and increase their courage. These dogs are not only used to drag the sled, but on journeys during the short summers they serve as pack animals, and carry a load of 25 or 30 lbs. fastened across their shoulders.



THE AMERICAN REDSTART.—(*Setophaga ruticilla.*)

The American Redstart.

One of the handsomest of our smaller birds is the Redstart, which begins to arrive in the northern states about the first of May, and commences to build its nest about the first week in June. The nest is generally placed on a small tree, about eight or ten feet from the ground, and is composed of fine strips of cedar bark, wild grape-vine bark, grasses, and the like, and is altogether a neat affair, with its interior constructed with considerable skill, and its exterior disguised by lichens and other materials, glued on with the saliva of the birds. It is hollowed deeply and lined with threads of grape-vine bark, hair, etc. Four eggs are usually laid, of a beautiful cream-white, marked with reddish-brown and pale-lilac spots. The birds frequent woods, orchards, and pastures, and their beautiful colors and vivacious movements enliven every spot where they abound. Their note is a shrill cry of *chee-we-ea*, uttered at frequent intervals. They dart about like the fly-catchers, and seize insects while on the wing, snapping them up with a noise like that of shutting a small pair of scissors; they also work industriously among the foliage of the trees and shrubs, and destroy many insects. The Redstart has received several systematic names, but the one accepted by our ornithologists, is *Setophaga ruticilla*. The bird is about five and a third inches in length. The male has its head and neck black, with bluish reflections; the sides of the breast, lower wing coverts, and tail feathers, except the two middle ones, of a beautiful orange-red; the abdomen and lower tail coverts, white; bill brownish-black. The female is different in color, for where the male has orange-red, her color is yellow, besides she is brownish-olive above, and whitish-yellow beneath. This bird stays in the eastern states through the summer, and about the middle of September begins its southern migration, at the end of which month it may be looked for in vain. The beauty of the plumage of the Redstart, and the havoc it makes among insects and their larvæ, should entitle it to protection.



THE ESQUIMAUX OR WOLF DOG.

TRAVELING THRASHING MACHINES.—It is a question worthy of consideration, if it is not more economical, as well as more convenient, for a farmer to own his horse-power and thrashing machine, than to hire one of the large machines which go from place to place to work. The cost of thrashing by one of these, is perhaps equal to one-tenth of the crop. It is attended by considerable extra expense in providing extra hands, or extra teams, and there is some waste in doing the work in a hurry. The labor is excessive while it lasts, and there is, moreover, the cost of boarding hands and horses. For a crop of 1,000 bushels of grain, the cost will amount to over $150. With a two-horse-power machine, costing $275 to $350, this work can be done in five days, without hurry, inconvenience, or loss, and often without extra help. The horse-power will also serve other purposes, which will thus reduce the cost attached to the thrashing. Upon farms that have 500 or more bushels of grain

to thrash each year, it would certainly seem better to have a machine of one's own, than to hire a traveling machine.

Walks and Talks on the Farm.—No. 140.

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I noticed a fact this spring that might be quoted to sustain the views of Prof. Atwater. One of the worst pests on my farm is Red-root or Pigeon-weed. The seed germinates in the fall on the winter wheat. It goes to seed next summer before the wheat is cut. The seed falls to the ground and germinates in the fall, and the plants grow among the clover and go to seed in June before the clover is cut for hay. Whatever plans we adopt for checking its growth in the winter wheat will fail to clear the farm of this weed, until we can destroy it also in the clover. A heavy crop of clover, of course, has a tendency to smother the red-root, but there is more of it in the hay than most of us suspect. If the clover is light, as mine was this year, the red-root shows itself in full force. I once asked John Johnston if sheep would not eat it? He replied in substance, that possibly they might be starved to eat it. He once had a neighbor who undertook to clean his foul farm by keeping a large flock of sheep and compelling them from sheer hunger to eat the weeds. He partially succeeded in his object, but he killed a good many sheep also, and so weakened the others that his flock was almost worthless. He advised me not to try the experiment.

I have a flock of pure-bred Cotswolds, kept for breeding purposes, and I feed the ewes and lambs liberally. This spring I hit on a new method of feeding them which works to a charm. I feed no grain or oil-cake, my object being, not to get the ewes fat, but to secure a large flow of milk for the lambs. Formerly I fed bran for this purpose, together with mangels and clover hay. This spring I fed *malt-combs* instead of bran. At first I fed it dry, but it occurred to me that when we want cows to give a large flow of milk we "slop them." And I thought I would try slopping my ewes and lambs. We were cooking malt-combs for the pigs, and I told the shepherd to put some troughs and half-barrels in the sheep-yard, and carry them a pail or two of these warm slops, and see if they would eat them. At first the ewes did not know what to make of them, and only drank a very little. But the next day they drank more, and more the day following, and the next day more still. "Give them all they like to drink," I had said, "it will not hurt them."—And it did not. But it seemed impossible to give them all they wanted. We carried over 100 pails a day to a flock of sixty ewes. This was more work than I had bargained for, and so I gave up the idea of cooking, and adopted a new plan. I put a large linseed-oil barrel, holding about 150 gallons, in the sheep-yard near the pump. Into this we put a bag, (50 lbs.), of malt-combs, and filled up the barrel with water, and stirred up the malt-combs, and let them soak twelve hours. Then we filled up the troughs with the slops, and let the sheep drink all they would. This was but little more labor than if we had given the sheep nothing but water. But it was a vast improvement over the ordinary manner of feeding dry food and clear water.

We continued to let the sheep have all they would eat or drink of these malt-combs, even after they were turned to grass—allowing them at the same time some dry malt-combs in the troughs. And now comes the point of my story. There was considerable red-root in my clover pasture, just in blossom, and it worried me a good deal to know how to prevent it from going to seed. That question was soon settled. *The sheep nipped off every green head and branch of the red-root.*

I think Prof. Atwater would explain this result as follows: Malt-combs are rich in albuminoids, and it has been shown that when sheep are furnished with the necessary amount of nitrogenous food, that they can then digest cellulose or woody fiber. If you feed a sheep on straw alone, it will not digest as much of the straw as if it had grain in addition. And so with this red-root or pigeon-weed; ordinarily the sheep will not touch it. It is undoubtedly a poor food. But when you give the sheep rich concentrated food, they will then eat more or less of this poor innutritious food.

It so happens that the sheep are having rich nitrogenous food, but I am by no means sure that they would not eat the red-root if they had corn instead of malt-combs. It is not the nitrogen they need, for dry young clover contains more nitrogen than dry corn, and yet they will not eat the weeds if they have nothing but clover. What seems to be needed is richer and more concentrated food, and it will probably make very little difference whether this rich concentrated food is what we call a highly nitrogenous food like peas, beans, oil-cake, or malt-combs, or whether it is a rich carbonaceous food, so-called, like corn.

The important fact, (and I thank Prof. Atwater for bringing it out so clearly), is this: If you want animals to eat poor food, do not starve them to it, but give them sufficient rich food to enable them to digest the cellulose or woody fiber. *It is a lesson which thousands of farmers need to learn.*

The drouth still continues. We shall have light crops in this section. Winter wheat on many fields will not return more than the seed. Barley and oats will be far below an average yield. It is too soon (June 15) to say anything about corn, but the indications are favorable. I hope we shall have a great crop. The country needs it, and I suppose an unusually large area has been planted. The scarcity of pigs will give us good prices for choice pork, and the "hog crop" next fall will prove a profitable one. And this is the real point. Business men and financiers talk about the money which we get for wheat, corn, etc., but what the country needs is more *profitable* agriculture. We need better crops per acre and better prices. I predicted the present depression in business, I knew that farmers were not making money. I knew they were selling nearly all their products at less than it cost to produce them. *It is not the aggregate amount of money we receive for our products that determines our prosperity, but the margin of profit left after deducting our expenses.* Our expenses have been far too great, and we have been obliged to curtail them—hence the depression in business. What the country needs to-day is better farming. I think we shall have a higher range of prices, but that alone will not insure prosperity. We must have larger crops per acre. This will lessen the cost of production. We must have better stock and feed more liberally.

"But will it pay?" again asks the Squire. "I got a Cotswold ram from you and bred him to a lot of long-wooled ewes that I got in Canada, and I am sure I could have done better with common sheep."—"There is no doubt on this point," I replied, "but you overlooked the essential point in regard to 'feeding liberally.' You half starved them. The poor things have had barely enough food to sustain the vital functions, and nothing to grow with."

John Pierce, a successful fine-wool sheep breeder, was here to-day (June 15), and we put three of our lambs on the scales. The first one we caught was a ewe lamb, born March 19. She weighed 75 lbs. The next was a ram lamb, born March 13. He weighed 85½ lbs. May 11, the latter weighed 59 lbs., and has gained 26½ lbs. in one month and four days. These are thorough-breds. We then caught an average grade Cotswold-Merino ewe, two years old, with a lamb by her side. She weighed 148 lbs., and the lamb, born March 17, 65 lbs. This lamb, on May 11, weighed 46 lbs., and has gained in one month and four days, 19 lbs. This ewe and her lamb is a fair representation of what we may expect from this cross when the ewes and lambs are fed liberally. I could select heavier grade sheep and heavier grade lambs. Now I will not stop to answer the Squire's question, "will it pay."—We do not get anything like as much for good mutton as it is worth, when compared with poor mutton, but even as things are now, I can figure out a very respectable profit from this system of breeding and feeding.

"C. S.," Pittsburgh, Ind., writes: "I sold to-day eighteen hogs, just ten months old, that averaged 286 lbs., after driving six miles. They were of Magie-Poland China-Berkshire-No Breed of this section, and considered something extra by my neighbors, but they were rather coarse, and not uniformly good feeders. Could not the same weight be made on well-bred pigs, in the same or less time, with less expense?"—Mr. S. has purchased a thoroughbred Essex boar, which he proposes to use on his large sows. This cross will certainly improve the quality of the pork, and I think, give him a greater weight in proportion to the food consumed. The above hogs were fed "bran and shipstuff; on clover pasture in the fall, corn in the winter, and clover pasture in the spring."—This is good management, and the pigs must have been a good lot. But there is no necessity for keeping the "large breeds" to get pigs of 300 lbs. live weight.

So far as I have observed, the quality of western hogs is rapidly improving. And this is the great point for us to aim at. We want better pork and better prices. We ought to produce the best pork, bacon, hams, and lard in the world. I do not like to see the following quotation in the English papers every week: "BACON.—Market very firm, Irish fully maintains late rates. Waterford singed, sizable sides, 84s. per cwt.; Limerick, 76s. to 80s. Hambro bacon has risen in value, and is now quoted at 70s. to 74s. per cwt.; American sides, 62s. to 63s. per cwt.; scalded short middles, 54s."

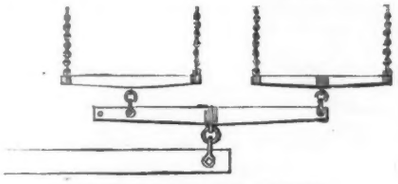
All we need to add from 3 to 5 cents per pound to the price of our own hams, and bacon, and pork, is a little more attention to *quality*.

I do not think I have ever known farmers feel so "blue" as at the present time. And in truth it is not to be wondered at. The times, and seasons, and crops are discouraging. But let us not be cast down. Let us keep on working and hoping. There is light ahead. We have less to complain of than any other class. The duty of every farmer who can afford it, is to push forward improvements. Labor and materials are comparatively cheap, and it is a good time to spend money—if you do it judiciously.

We have a German farmer in this neighborhood, who sets us all a good example. He commenced life as a hired man. He has now one of the best farms in the town, and is adding acre to acre. Whatever he does is done well. He never seems to be in a hurry. But he commences to plow in the spring before some of us begin to think about getting the plows ready, and he has ten or twenty acres of barley sown before some of us have plowed a furrow. He is always ahead. Everything is in its place; everything in good repair and ready for use at a moment's notice. His land is getting cleaner every year—and I was going to say richer, but I am not so sure on this latter point. I have sometimes thought he was running his land rather hard. But there is certainly no diminution in the crops. His farm would sell for 50 per cent more than he paid for it, while other farms have not increased in value. The secret of success, in his case, is first in the man himself—in his industry, sobriety, and good judgment. And in the next place I think it is due principally to the fact that he plows early, and plows late, and plows well, and plows often; and he uses the harrow and the roller until his soil is mellow and in good order for the seed. Then he cultivates his corn and potatoes and beans the moment he can see the rows, and he suffers not a weed to grow and go to seed. I ought to add that he has five energetic sons to help him, and while he hires little or no labor, there is a large amount of work done on the farm. In fact, say what you will, there is, never has been, and never will be, good farming without the expenditure of considerable labor.—"I have always employed a good many men," said John Johnston, and all really successful farmers, I think, would be obliged to say the same thing.

We have a steam thrashing machine just introduced for the first time into this neighborhood. I have long wanted to thrash by steam. Two or three days thrashing hurts my horses more than a month's ordinary work. They have to go round and round, the right hand side and legs of the

horse traveling about one-eighth faster than the left side. They are constantly pulling "on a twist." This can not be avoided. I always give the outside horse, which has to travel about one-fifth faster than the inside horse, a longer portion of the evener. Or rather, we bore a hole about three inches from the end of the left half of the evener. This gives the inside horse, which does not travel so far, a heavier load to pull. The thrashers never seem to take kindly to this arrangement, and do not adopt it with their own horses. But they give no reason. It seems hardly fair to make a horse that has to walk, say 25 miles a day, pull as hard as one by his side that only walks 20 miles. I have a favorite horse that has great pluck and endurance. He is always bound to keep ahead of any horse he is with. But put him on to a sweep-power, and let him be the outside horse, and his spirit dies out of him. After a few rounds, he gives up in dispair. He is a changed horse. There is no life nor pluck in him. He lags behind. At the plow or on the road he never needs a whip. He is always wide awake and always ahead. But on the machine, the driver is constantly saying "get



EVENER FOR THRASHING MACHINE.

up, Tom"; but neither word nor whip will make him keep up with the inside horse. I fancy the inside horse, who, during all the other days in the year has to see "Tom" keep ahead of him, rather enjoys Tom's humiliation on thrashing days. Poor Tom, he sometimes makes me angry by not keeping step with the other horse on the road; but I cannot but feel sorry for him when on the machine. I would not treat a poor horse so. I want to thrash by steam.

But here comes in a difficulty. How about the insurance? I am insured for three years. I pay $6 per thousand for three years. And I use a steamer for cooking food all the time, and no objection. But if I want to bring on a steamer to thrash with, I must pay, as I understand the matter, $10 a thousand extra for one year, and am then hedged in with a set of the most minute regulations, neglect of any of which invalidates the whole policy. I am insured for say $10,000. I pay $60 for three years. I want to thrash for two days.—"Well, we will give you a 'permit,' *provided* you do so and so. You must have a pit of water under the fire-box, and have water constantly near, and you must keep a special watchman every minute, night and day, and at meal times."—That is all right, I say. Anything to pay?—"Oh, yes, we charge $1.00 per hundred."—What, for two days?—"No, *for a year*, but you must only thrash one harvest."—But I do not want it for a year. I am already insured with you for three years. I can thrash all I have to thrash in two or three days, and the steam engine will then be removed. How much extra must I pay for two days?—"*One hundred dollars.*"—In other words, they ordinarily insure me on ten thousand dollars, at the rate of *eleven cents* for two days, but for two days' thrashing with a steam engine, I must pay one hundred dollars *extra!* A flashy Insurance Agent, with a cigar in his mouth, matches in his pocket, and no brains in his head, is a much more dangerous article among farm buildings, than a steam engine. I think farmers should keep the ground on which he stands, well saturated with water, and be very careful *not* to wet the choice specimen of humanity.

CONCRETE ROOFS.—A fire-proof roof may be made of cement. A flat roof is no more costly in money or space, than a peaked roof, and such a roof, if made of boards covered with a coating of cement, of water-lime and sand, and then another of asphalt, is absolutely safe against fire from without. It is easily repaired when necessary, and a brick or stone house thus finished, is as secure as it is possible to make it. In view of the increasing risk from fires, and the increased cost of insurance on country houses, buildings should be made fire-proof as far as possible.

Tim Bunker on Tramps.

How to Cure them.

"That is what I call 'rubbing it in,'" said Jake Frink, as he stopped at the wood-pile yesterday morning with the saddest expression upon his face I have seen in a month.

"Rubbing what in?" inquired Seth Twiggs, drawing a match across the end of a log upon which he was sittting, and lighting his pipe.

"Why, haint you heerd on't yet? Ye see, tew tramps called at our house yesterday forenoon, and found Polly ironing. They was big stout fellers, and I was out in the corn-field hoein. They said they had bo't a shad out of a wagon in the street, and would like to cook it over her fire, as they was hungry and hadn't had anything to eat for tew days. Polly didn't like to rile up the fellers by saying no, and as the fire was all agoin', she said they might cook the fish. So they cooked the shad, and Polly sot on a hull loaf of rye bread, and a lot of Johnny cake, and she said they eat as if they hadn't seen any vittles in a week. They was very purlite, and thanked her for her kindness. When Polly Frink come to git dinner for her men folks, her eyes opened sum. The shad she got from market that mornin' and hung up in the sink-room was nowhere to be found. At fust she thought the cat had got it. But the cat was shut up down seller. Then she begun to smell a mice. Don't you think them scoundrels had stole Polly's shad and cooked it before her eyes? That's what I call rubbing it in."

"Sarved you jest right," said Seth Twiggs, whose eyes were twinkling through the clouds of smoke. "If you haint any more sense then to keep open doors for every loafin' lazy cur that comes along, you desarve to be took in in the same way. Them critters will travel jest as long as they can find any body to feed 'em. They hate work worse than pizen, and they jest mean to live by spungin'. They haint got any homes, and won't have as long as they can find fools enough to feed 'em without work. Such chaps don't git any fodder at our house, I tell you."

"It is a growing evil," said Deacon Smith, who has been first Selectman in Hookertown for the last five years. "These tramps cost the town over five hundred dollars last year, and by the way they have come on this season, the bill will be a good deal larger this year. I do not know what we are going to do about it."

"Duno, duno!" exclaimed Seth, rising from his log and taking the pipe from his mouth. "Why, Deacon, it is plainer than the nose on yer face. It's feed these critters are after, feed without work. Stop the feed, and they will go to work and earn their own bread."

"Not as you knows on," said Jake Frink. "I guess they'd set down by the road-side and die if they had to hoe corn fur a livin'."

"Well, the world wouldn't luse much ef they did," said Seth.

"We ought to feed the hungry, ought we not?" inquired the Deacon.

"Not by a jug full," said Seth. "It's a clear purvarsion of Scripter to feed such lyin', thievin' curs as come along here every day. Parson Spooner preached the trew doctrin last Sunday—'If a man will not work, neither should he eat.' I wish he could 'a had sum of the tramps there to hear him. But the saints got their fill for one't, I guess. You see if it's wrong fur a man to eat who won't work, it's kind o' wrong to give him food to eat. It's jest nussin' his laziness accordin' to my notion. Saints like Aunt Polly, who stop their ironin' to feed tramps with stolen shad, ought to have a new intarperter of Scripter. There's tew sides to feedin' the hungry. We shouldn't be partakers of other men's sins—and laziness is one of 'em."

It seems to me there is something in Seth's philosophy of vagabondism, which is so greatly increasing all over the country. Begging has always been common in our cities, a distinct profession imported from other lands. But the agricultural districts have been comparatively free from it, until in recent years. Now the country villages and the roads between them swarm with these tramps, generally stout, able-bodied men, but not infrequently accompanied by women. They have generally good physical health, are not emaciated with hunger, but ruddy with full feed, and very decently clad with clothing given them. They travel on leisurely from one place to another, begging at the doors, feeding upon the best, and throwing away as unsuited to their dainty appetites much more than they consume. Under pretence of needing rail-road travel to get to their uncle, or cousin, in the next city, they beg money, and spend it principally for whiskey and tobacco. They apply very generally to town authorities for assistance, and get what money they can to help them into the next town. Recently the Hookertown Selectmen, on comparing notes, found that each one of the five had paid the same beggar on the same day a dollar to help him along, adding five dollars to the town expenses, and five dollars to the profits of the tramp, making a pretty good day's work. The town fathers got a little light that day. The expenses of the towns are very largely increased by aid given to tramps. It is time the farming community was waked up to this great and growing evil. We need doubtless more legislation in most of the states against this evil. Massachusetts has recently passed a good vagrant law. A work-house is wanted in every town, where the Selectmen can detain every tramp, and make him pay for his food and lodging. These houses would not be very much crowded. There is a community of feeling and of knowledge among these vagabonds, and as soon as they find that they must work for a living, they will abandon their vagrant life and seek employment. Meanwhile Seth Twiggs' philosophy is worth looking at. It is sometimes wicked to feed the hungry. Our present treatment of tramps encourages begging, lying, theft, barn burning, and every evil work.

Hookertown, Ct., June 10th, 1875. } Yours to command, TIMOTHY BUNKER, Esq.

How to Work a Bull.

One reason why bulls are vicious, or at least untrustworthy and dangerous, is that they have never passed through any course of discipline. Well fed from the first, they are permitted to learn and exercise their strength at all times, until their owners are frequently surprised to find them turn suddenly upon them without warning. Besides this, the usefulness of these animals is greatly curtailed in consequence of their idle life and good keeping, and the complaint of unfruitfulness is frequently made. A remedy for both these evils, consists in putting these animals to work. Viciousness is prevented by the discipline and training, and a bull that is broken to the yoke when young, and occasionally used, is kept in good temper and under safe restraint. He is no longer an uncertain and dangerous animal, possessing all the ferocity of a wild beast. He is kept in better health than when idle, and his value for stock purposes is greatly increased. Cases are known to us in which bulls, entirely uncertain as stock getters, and consequently broken to the yoke, have after some time become perfectly sure, and have more than doubled their owner's profit in this way alone. One of the best common bulls for producing calves we have known, was constantly worked in a cart or at the plow. The practice might be profitably followed with high bred bulls which fail of producing calves, and are consequently greatly reduced in value.

A harness for a bull consists of a yoke and bow, shaped as shown in figure 1. The yoke is made to fit the neck snugly, with a curve sufficient to bring the ends low down at the sides. At each end there is a strong bolt and ring. The rings are made large enough to admit the end of a cart shaft, a hold-back being fixed on the under side of the shaft, as shown in fig. 2. A draft-chain hooks into the eye

of each bolt. A belly-band is buckled around the animal's body. This harness is very light and easy, and there is nothing about it to chafe or worry the bull. The harness for plowing or cultivating, consists of the same yoke and bow, and a pair of draft chains, shown in fig. 3, which hook into the rings on the yoke. A broad leather band passes over the animal's back arranged as to length to suit his hight, and to allow the chains to hang in the line of draft, without pressing on the back. There are rings on the lower ends of the chains, by which they are attached to the hooks of the whiffle-tree. The length of yoke should be adapted to the size of the bull, but should not be so long as to give too much room between the shafts or the draft chains, nor so short as to allow them to chafe the animal's sides. In working a bull it is best to use gentleness with firmness, and to avoid irritating

Fig. 1.—YOKE AND BOW.

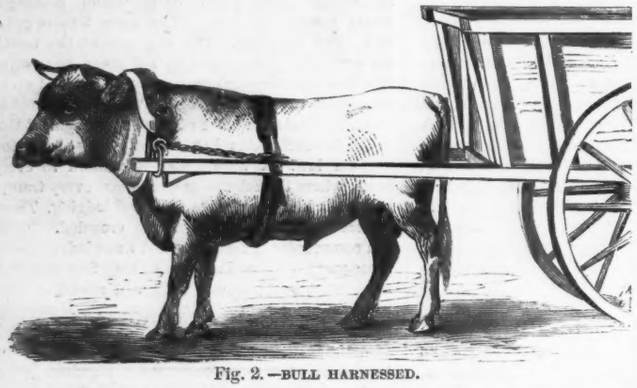


Fig. 2.—BULL HARNESSED.

or worrying the animal, so as to provoke his temper. The same harness may be used to work cows, for there are many cases in which they may be worked to advantage as well as a bull. A yoke of Dutch cows were exhibited at the New England Agricultural Fair, of 1873, which had done all the plowing and hauling of a 30-acre farm, without

Fig. 3.—PLOW HARNESS.

failing in the least in their milk, and without any injury whatever to their calves. If this can be done in one case, it is worth considering if it may not be done in other cases with equal profit.

Chicken Coops.

The constant stream of enquiries which are made respecting the diseases of chickens and fowls, shows that something is wrong in their treatment. Poultry generally suffer from preventible ills. It is almost useless, and rarely ever worth while to treat sick poultry. A chicken is hardly worth the trouble required to physic it, and nine out of ten die in spite of all the treatment that can be given them. Poultry are naturally subject to very few diseases. If kept clean, not over fed, not cooped up close, kept from foul putrid food, supplied with clean water regularly, and have abundant pure air in their roosting places, they live and thrive without any trouble, except in rare cases. The fatal disorders, which result from ill-treatment, cannot be cured by medicine. It is too late. The mischief has been done when the first symptoms appear, and the best procedure is generally to kill the diseased fowls, and save the rest by sanitary measures.

The foundation of the various poultry diseases is generally laid while the young chicks are in the coops. There they are crowded in a confined place, which is frequently damp and unclean. They are shut up close at night in these impure quarters, or they are allowed to go forth early in the morning, while the grass is wet with dew, and become chilled. Some die and some survive to live unhealthily and die finally of roup or cholera. To prevent these troubles, the chickens while young, should have the very best of care. The coops should be so made as to secure cleanliness, dryness, ventilation, safety, and to control the movements of the chickens. A coop of this character, which is very convenient in use, is shown in the accompanying illustrations. It is not costly, and it will pay to use it for common chickens. It is portable, having handles by which it can be lifted while closed, and moved to fresh clean ground. It therefore secures cleanliness, as ground that has been occupied by a number of chickens for a few days, becomes foul and unwholesome. It is also provided with a floor-board or drawer, which can be withdrawn every day, and cleaned. If this is supplied with fresh sand or earth daily, the coop will be kept clean and sweet, and the manure dropped may be preserved for use. It secures dryness, because it is raised from the ground by feet at the corners, and is covered with a broad sheltering roof. It has good ventilation, even when closed, by means of the wire gauze at the front, and by holes in the ends, which should also be covered with wire gauze. It is safe; no chicken can be killed in moving it; it is shut up at night, so that no rats nor weasels can enter, and the chicks cannot roam abroad when the ground is wet. The movements of the hen and chickens can be controlled with facility, as the roof is hinged at the peak, and opens to admit or remove the hen. The door at which the chickens go in or out, and when closed is secured by a button. Twice in the season the

Fig. 2.—REAR VIEW OF COOP.

coops should be white-washed with hot fresh lime; which will keep them free from vermin. Figure 1 shows a front view of the completed coop, arranged for two hens. Figure 2 gives the rear view with the floor withdrawn, to be emptied and refilled. Figure 3 shows the shape of the movable floor. In fig. 4 is a section of the coop through the middle, showing the manner in which it is put together. There is economy in using such a coop as this, as one hen, when well cared for, may be made to bring up two or three broods together, and the hens discarded as mothers go to laying again.

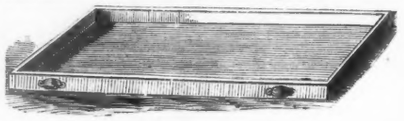


Fig. 3.—EARTH DRAWER.

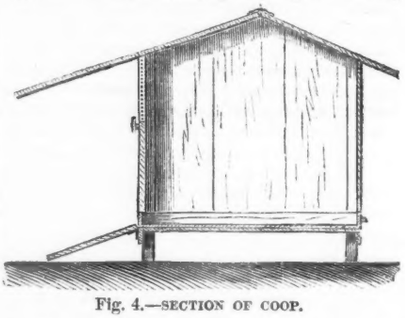


Fig. 4.—SECTION OF COOP.

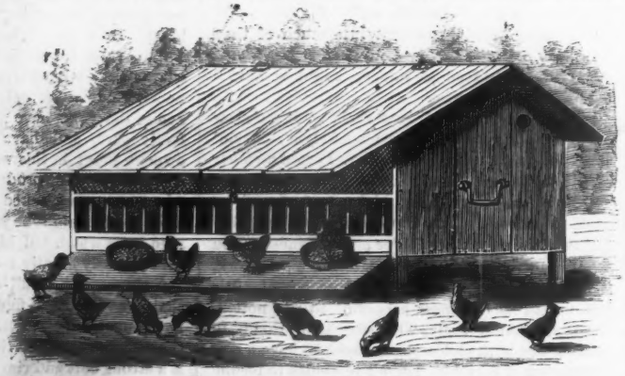


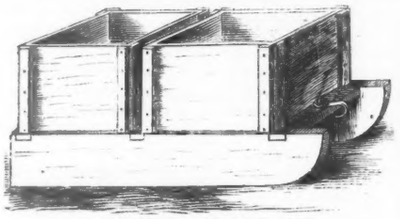
Fig. 1.—FRONT VIEW OF COOP.

the front is hinged, and when opened, is let down to the ground, and makes a sloping platform upon

Harvesting Castor Beans.

In some of the western states, the Castor Bean is a convenient and profitable crop. While the planting and cultivating are not more expensive or troublesome than for a crop of corn; the chief trouble is in harvesting the crop, which, ripening irregularly, makes it necessary to go over the field at least four times, to prevent a considerable loss of the beans. These repeated passages through the field must be provided for in planting, and some proper arrangement must be made for gathering the beans. Some planters leave a space of six feet between every four rows, in which to pass back and forth, and then use a sled, such as is shown in the accompanying illustration, to collect the beans as they ripen. The sled is drawn by one horse, and carries two common dry goods boxes, into which the spikes are thrown as they are cut; afterwards they are carried to the "popping yard." When the spikes have turned to a dark green color, or the lower pods on the spike are ready to burst open, they should be gathered at once. Those spikes which still have the light bloom upon them, are not ready for harvesting, and should be left to ripen for a few days longer. If they are cut before they are ripe, the beans will be light and imperfect, and not fit for planting or for sale. Before the whole crop is ripe, it will be necessary to go over the field four

times at least, at such intervals as may be found necessary to save a loss of beans by shelling and scattering. Two sleds of the kind shown in the illustration, will be needed for 10 acres, and three will be enough for 20 acres. The runners are made of two-inch plank, from six to twelve inches wide, which are fastened together by two or three other planks, spiked cross-wise upon them. A narrow strip of board may be nailed on each side, to keep the boxes in place. The loose boxes are more convenient than fixed ones, as the load may be quickly dumped from them into the yard where the beans are to pop out. The yard may be a smooth piece of hard prairie, on which the grass has been cut close to the ground, left to dry, and then burned and swept clean of stubble, or a barn-yard fenced with boards may be used. For 20 acres, a yard 100 feet square will be needed. The ground is swept clean and the spikes thrown upon it, a border of at least 20 feet wide being left all around, to catch

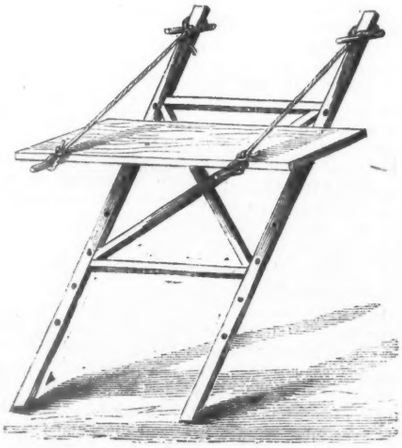


SLED FOR CASTOR BEANS.

those beans that pop outwards, as the capsules open forcibly. After two days the heap should be turned over with a garden rake, or a hay rake. At the end of four or five days the beans will be nearly all out, and the refuse may be raked into a pile where it should be left until the whole crop is harvested. Those beans that have not popped out, can then be gathered together the last thing. The beans and burs are then swept up and separated in a common fanning mill, after which the beans are put in bags for sale. The harvesting of this crop being light easy work, may all be done by children, the largest boy or girl taking charge of the horse.

A Stacking Stage.

When straw from the thrashing machine is stacked in a hurry, it is very convenient to have a stage upon which one of the pitchers may stand, to reach the top of the stack. A stage is also very useful for finishing off a round hay or grain stack. There are many other uses upon the farm, or in the orchard, or garden, to which this stage, shown in the annexed illustration, may be put. It is useful in gathering fruit, in painting or repairing buildings, or in digging deep cellars, when it is necessary to make two lifts. It is very simple in con-

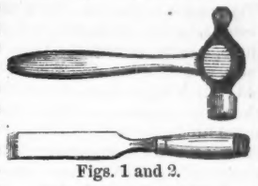


STACKING STAGE.

struction. A stout frame is made, much like a broad ladder without rungs, and joined together by cross bars and braces. A series of holes are bored, into which two bars are fitted, and a platform as long and wide as may be needed, is made to rest upon the bars. The bars are supported by chains or ropes, as shown in the engraving, or by stiff braces underneath, if the ropes would be in the way of doing the work in hand. A platform six feet long, by three broad, will be required in stacking, but for other purposes a much narrower one may be used. By changing the construction somewhat, the frames may be made to answer the double purpose of sides for wagon racks, for hauling hay or grain from the field, as well as for a support for the stage.

Hints for the Workshop.

The hammer best suited for all the purposes of the farm-workshop is one made very broad across the eye, so as to take a wide handle; such a hammer is shown in fig. 1, and will be seen to be very strong in the part where they are generally the weakest. The handle is not easily broken and can not come loose if properly wedged in. The hammer is thin in the eye, and is therefore lighter than an ordinary hammer of the same strength, while the weight is accumulated in the face where it is most needed. In place of the usual claw, there is a rounded nose, which can be used for riveting or doing fine work on the anvil. This hammer is a carpenters' and blacksmiths' hammer in one. The handle should be made oval, that it may not turn in the hand; the part grasped in the hand should be large enough to give a firm hold without cramping the hand in use, and the neck of the handle should be worked down so as to make it somewhat elastic, and prevent that jarring of the muscles of the hand, which is often very annoying.



Figs. 1 and 2.
HAMMER AND CHISEL.

The handles of chisels are very apt to be spoiled by battering or splitting in use; a method of preventing this is shown in fig. 2. The top of the handle is sawed off, and two pieces of sole or belt leather cut to fit neatly, with a slight bevel upward, are tacked on with wrought or copper nails. The handle will then wear much longer than without this precaution, and if a hammer should be used to strike it, no injury will be done, nor will the face of the mallet be beaten out of shape, as often happens when the handles have iron rings.

About Splitting Rails.

For split rails only straight grained timber should be chosen. It is better to have knotty twisted timber sawn into posts and rails, or boards, than to waste it by working it up into poor weak splintered rails. The logs being chosen, the tools required are a maul, a few sharp-pointed iron wedges, two axes, and a dozen wedges of some tough hard wood. These wedges are best made of second growth hickory, or other tough wood of uneven grain. Small trees, of four inches in diameter, grown upon poor rocky soil, make the best wedges. They should be made with a slight ridge in the center of the bevel from shoulder to point, and above the shoulder the edge should be beveled off all round, to prevent battering and splitting the top. The form of the wooden wedge, as well as that of a well-shaped maul, is shown in fig. 1. The maul or beetle should be protected with iron rings, and the handle ought not to be more than twenty-four inches long. The iron wedges should be square at the heel, tapering evenly to the point, which should be steeled and be kept ground sharp. The log to be split should be first marked on the line of the split with an ax driven by light blows of the maul. Two iron wedges are then driven in by alternate blows, and if the log is large, three will be needed. A single wedge may be buried in the center of the log without splitting it, but by using two at the same time an even seam will be opened. Wooden wedges are then driven in the opening on the side of the log, until it is split in halves from end to end. When very large pine

Fig. 1.—MAUL AND WEDGES.

logs are to be split, a thick slab should be taken off from each side, and the central part again reduced by portions taken off each side of that, and the square center is then split as if it were a small log. If the timber is inclined to run out and not split straight, an ax is driven in with the maul along the line where the timber ought to split, and iron wedges are driven in along this line; any "strings" which may remain are cut through with the ax. The half of the log is then split in the manner shown in the illustration into two quarters, commencing at one end. The quarters are split somewhat differently. Instead of commencing at the end, the sharp wedges are driven in the side, and the central portion of the piece of timber is split off first. The next layer is then taken, which is split again into two parts, always driving the wedges in the middle, and looking out for the running of the timber, and preventing it as already explained. The outside portion is then split into halves, and

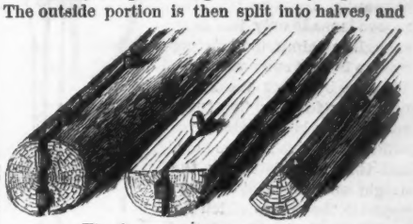


Fig. 2.—MANNER OF SPLITTING.

then into quarters, or into five rails if necessary. These methods of splitting are shown in fig. 2.

Two Handy Bolt Wrenches.

A wrench should be carried along with every vehicle, implement, or machine, in which there are bolts that are liable to work loose. A wrench that will fit bolts or nuts of various sizes, such as is illustrated at figure 1, is very convenient. It is made of light square bar iron, and has a sliding jaw upon it. By moving this jaw up or down, the wrench may be made to fit several sizes of nuts. Another handy wrench, a description of which is given us by a correspondent, is shown at figure 2. This is an ordinary wagon bolt and wrench, for the "hammer strap."

Fig. 1. WRENCH.

Fig. 3.—WRENCH ON PLOW.

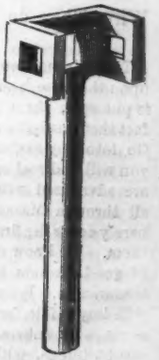


Fig. 2.—WRENCH.

In the wings of the wagon wrench, however, are cut square holes of different sizes, as ¾, 1, and 1¼

inch in diameter, as shown at figure 2. The same correspondent also describes a plan of carrying a wrench upon a plow handle, shown at figure 3. A piece of leather cut from an old boot, is nailed on the inside of the plow handle, on the left or land side of the plow, and near the upper cross-bar, so that the cross-bar may help to retain the wrench in the pocket thus made. An extra share-bolt may also be carried in the pocket. By the use of this contrivance, an occasional journey from the field to the tool shop may be avoided.

A Hoist-Wheel With Brake.

A hoisting apparatus that may be made to sustain its load at any desired point by means of a self-acting brake, is often very useful upon a farm. A contrivance of this kind is shown in the illustration. It consists of a grooved hoisting-wheel with a short flanged barrel at one side, and an iron or wooden axle with iron gudgeons. This may be suspended in a fixed frame, or by means of a chain or a rope to a hook hung wherever it may be wanted temporarily. The groove is made only just deep enough to permit the hoisting rope to be half sunk within it. The rope by which the lift is taken, has four or five turns around the barrel, which are sufficient to give it a firm hold, and this is assisted by the weight suspended at the end opposite the one to which the load is attached. The portion which holds the rope consists of a clog of hard wood, which turns loosely upon a bolt which is rivited or screwed to one end of the link, at *a*. Its proper position is such that the rope as it is drawn down clears it easily. When the load is elevated sufficiently, it may be kept suspended at any point by pulling the hoisting rope forward, when the rope is brought against the clog, which is lifted by the pressure, and as the rope is slackened, the clog is pressed tightly against it; the greater the weight the more securely it is held. When the rope is drawn down again, the brake is loosened at once, releases the rope, and the clog falls back, where it remains until again called into action. This simple contrivance is especially useful in the barn, in slaughtering animals, in raising stones or timbers which are not of very great weight, and many similar services.

HOIST-WHEEL.

Why They do not Stay on the Farm.

There is no denying it; the boys do not stay upon the farm, and will not unless some constraint is put upon them. There is no getting over the fact that this is the rule all through the older states. Go into any exclusively agricultural district, and you will find real estate marvelously cheap. Farms are advertised within thirty miles of Boston, and all through Massachusetts, for prices that will barely cover the first cost of the buildings put upon them. We know of good farms within two miles of good markets, sold this spring for fourteen dollars an acre. From three to five thousand dollars will buy a fair farm of from one to two hundred acres, with substantial house and barn and other out-buildings, within easy reach of church, mill, school, post-office and market, in almost any county in New England. There is no larger population in these districts than there was fifty years ago, and there is no more wealth. In some of them both population and wealth have decreased largely. Farm houses that once sheltered respectable and intelligent families, have gone to decay, and nothing but the old chimney is left. Meadows and pastures are fast growing up to wood, and lilacs and apple blossoms mingle their perfume with birches and oaks in April and May. Such are the facts. Why is it? There are many causes operating to this end: the new land in the west, the adventure of mining life in the mountains, the new fields open in the cotton belt, speculation and business in the neighboring village or city—but above all these is the social leanness and starvation of American agricultural life. We are speaking now of the isolated farming districts, from five to ten miles from the market town. Here is the old style school house, and the means of education are just as they were fifty years ago or more; the winter school of four months, taught by master, and summer school of three, taught by mistress, both hired at cheapest rates, and some are still "boarding round." The old church is yet there for Sunday gatherings, and church and school are about the only occasions of social life known to old and young, except in rare visits to other communities. The main thing is work, early and late, summer and winter; and the chief problem for the brain to solve, is how to get a living. The whole population is not so much engaged in living, and in enjoying life, as in getting ready to live. If we look in-doors there is rather a lean larder the year round. Salt junk and potatoes are the main stay. The body is not well provided for. The search for a soft bed is not well rewarded. The intellectual life is still more poorly fed. Often no paper at all is taken. If one is afforded, it is likely to be a political journal. Agricultural papers are the rare exception. There is little but gossip for the mind to feed upon. The school is often neglected because the boys and girls are wanted at home. The church is neglected because it is not convenient to go to meeting. The horse sheds are not built, the horse is lame, the carriage has a broken spring, or more likely, the preacher gives out too much light for the surrounding darkness. Bats love twilight. The muscles are overtaxed, and vitality is mainly occupied in sustaining the waste of muscle. There is no time for recalling the daily news, for discussing agricultural topics even, or for the enjoyment of social life at the table. Father and mother live under pressure all the while. Hearty sympathetic interest in any thing outside of the farm, is almost unknown. Smiles are few, and jokes still fewer. Young America on the farm revolts against this eternal round of solemn facts. He wants a little variety in his diet for his body, and for the mind. Salt junk twelve months in the year, palls by the time he is fourteen, and at fifteen he runs from it to the city, where he can get a taste of the eggs and chickens his father raises. He wants something to think of besides picking stones and churning butter, riding horse to plow, and hoeing a half row in weedy soil. He has seen agricultural papers with pictures of fine horses and cattle, houses, and barns, labor saving machines and tools. He would like to read about these things, and realize the pictures. He wants more papers and books, lyceums, lectures, and especially more society. He wants to enjoy life a little while he is young, and not to wait for grey hairs before he begins to live.—Here is the cause of our waning agriculture and deserted farms. The remedy is more easily seen than applied. We must have more living while we are getting ready to live.

CONNECTICUT.

[Our correspondent has drawn, we think, much too dark a picture of farming in New England. "*Good* farms," at $14 an acre, are an exception in almost every county in New England. Recent statistics show that the percentage of children attending school is greater in Connecticut than in any other state in the Union, with a single exception perhaps, and we see a change for the better in the county school-houses and their surroundings, over what we observed 25 years ago. Still, there is great room for improvement in many respects referred to by our correspondent. A copy of this journal placed in every farmer's family would have a decidedly good influence.—ED.]

The Bovine Mind.

Huc & Gabet in their delightful Journal of Life in Thibet, relate the following: "These long-tailed cows are so restive and difficult to milk, that, to keep them at all quiet, the herdsman has to give them a calf to lick meanwhile. But for this device not a single drop of milk could be obtained from them. One day a Lama herdsman who lived in the same house with ourselves, came with a long dismal face, to announce that his cow had calved during the night, and that, unfortunately, the calf was dying. It died in the course of the day. The Lama forthwith skinned the poor beast, and stuffed it with hay. This proceeding surprised us at first, for the Lama had by no means the air of a man likely to give himself the luxury of a cabinet of natural history. When the operation was completed, we found that the hay-calf had neither feet nor head; whereupon it occurred to us that, after all, it was perhaps a pillow that the Lama contemplated. We were in error, but the error was not dissipated until the next morning, when our herdsman went to milk his cow. Seeing him issue forth, the pail in one hand and the hay-calf under the other arm, the fancy occurred to us to follow him. His first proceeding was to put the hay-calf down before the cow. He then turned to milk the cow herself. The mamma at first opened enormous eyes at her beloved infant; by degrees she stooped her head towards it, then smelt at it, sneezed three or four times, and at last proceeded to lick it with the most delightful tenderness. This spectacle grated against our sensibilities; it seemed to us that he who first invented this parody upon one of the most touching incidents in nature, must have been a man without a heart. A somewhat burlesque circumstance occurred one day to modify the indignation with which this treachery inspired us. By dint of caressing and licking her little calf, the tender parent one fine morning unripped it; the hay issued from within, and the cow, manifesting not the slightest surprise nor agitation, proceeded tranquilly to devour the unexpected provender."

"This last touch," adds Col. Hamerton, in his Chapters on Animals, "entirely paints the brute. She has recognized her offspring by the smell, chiefly, and never having heard of anatomy, is not surprised when the internal organs are found to consist simply of hay. And why not eat the hay? The absence of surprise at the discovery, the immediateness of the decision to eat the hay, are perfectly natural in a cow, and if they surprise us it is only because we do not fully realize the state of the bovine mind. If we reflect, however, we must perceive that a cow can be aware of no reason why calves should not be constructed internally of hay. [Indeed, if the cow reasons upon the matter, she knows that she has taken an abundance of hay into her own interior, and why shouldn't some of it appear in her calf?—ED.] On the other hand, the bovine mind cannot be wanting in its own kind of intelligence; for oxen know their masters, and when in harness are remarkable for a very accurate and delicate kind of obedience; indeed, the horse is light-headed and careless in comparison with them. Animals, like the great majority of the human race, observe only what concerns them, and see everything simply in the relation which it bears to themselves." These remarks are so good and pertinent that we cull one or two more relating to another domestic animal.

"The effort of dramatic power necessary to imagine the life of another person is very considerable, and few minds are capable of it; but it is much easier to imagine the sensations of a farmer than those of his horse. The main difficulty in conceiving the mental state of animals is, that the moment we think of them as *human* we are lost. A human being as ignorant as a horse would be an idiot and act with an idiot's lack of sense and incapacity for sequence. But the horse is not an idiot; he has a mind at once clear and sane, and is very observant in his own way. Most domestic animals are as keenly alive to their own interests as a man of business.

"In our estimates of animal character we always commit one of two mistakes; either we conclude

that the beasts have great knowledge because they seem so clever; or else we fancy that they must be stupid, because we have ascertained that they are ignorant; so that, on the one hand, we constantly see animals severely punished for not having known what they could only have learned through human language; and, on the other hand, we find men very frequently underrating the wonderful natural intelligence of the brute creation, and treating animals without the least consideration for their feelings, which are often highly sensitive."

How a good Farm Wagon should be Built.

The original cost of vehicles in use among farmers, exceeds $200 for each farm. Many of these are unsuitable for the purpose intended, poorly made, and very badly cared for. Scarcely any piece of mechanism is put to more severe strains, or suffers more from exposure, than the farm wagon. When a farmer buys a wagon he should look well to quality rather than to price. A good wagon with good care should stand for 12 to 15 years. No two-horse wagon should be used with tires less than 1¾ inch in width. The pole should be of the best straight white ash, rather small at the end, and the largest part about 20 inches ahead of the evener. The evener and neck yoke should be of good length, as the team will then work better on rough roads. The tires should be a very little wider than the felloes, so that the paint will not wear off; they should be bent true and fit tightly. A wheel to carry loads should have about ¾ inch dish, and nearly all of this should be made in the wheel and not drawn over with the tire, else the tenons will be strained and the spokes loosened. The hub should be firm, solid, and fine-grained, but not "too hard;" the spokes of fine grained second growth oak; the tenons should be smooth and uniform with a little more taper than the mortice, and 2/16 of an inch wider at the shoulder than the mortice, and 3/32 inch thicker. If the hubs are well banded there will be no difficulty in driving, if the points are smeared with tar. The spokes must be perfectly dry, two years seasoned, and the tenons after having been thoroughly warmed to drive out all atmospheric moisture, should be driven until the shoulders come down firm on to the hub, but not driven into the hub so as to spoil the shoulder and the grain of the hub. The spokes on the fore wheels should be driven over, 6/16 of an inch, and the hind ones 3/8 of an inch. The felloes should be of the finest grained oak to be procured; good forest timber is better than young second growth. When they are bored and fitted they should be put on as soon as possible, and left on so that they may settle on to the tenons, which they should fit tightly. They should not be painted until they have been entirely finished two weeks, and if the felloes are rolled in a sheet-iron tank of boiling linseed oil, the tires will not need re-setting until worn out. After boiling they should be wiped with old rags, as the paint will not adhere well where the oil is allowed to dry on. Good, sound, hard maple, which has been dried under cover, away from the sun and rain, but with free circulation of air, makes the best axle, although some hickory is very good. The skeins should be set exactly level on the bottom, and all first-class skeins have the gather cast in them. The reach should be made of a good tough stick, and not too large, as it must either spring or break. When the wagon is painted, nothing but the best English orange mineral, which is better than our red lead, should be used for the first coat. This should be ground in five parts boiled oil to one part Japan dryer, using a very little turpentine. This coat is put on all the woodwork before it goes to the blacksmith, and if the felloes have not been treated with boiled oil, the treads of them should have two coats, and the smith cautioned to shape his tire well before heating, and not to burn quite all of the paint off. The second coat is put on after it leaves the smith, and should be ground in boiled oil and Japan, half and half. The third and last coat may be the same, or of one part oil, one part Japan, and one part No. 1 coach varnish. The wood-work should be well sand-papered before priming, and lightly after it leaves the smith-shop, and after removing all grease and smoke. After painting, the wagon may be striped neatly with black, and a good heavy coat of coach varnish given. The varnish should never be permitted to wear through to the striping, but renewed when necessary, and if it has been well done with good stock, it will stay on for twelve years. A wagon with 3¼ inch skeins, made in this manner, will carry 6,000 lbs., and last fifteen or twenty years. The box should be made with extra side-boards, primed and painted with white lead and umber, half and half in weight, darkened with a little lamp-black, and mixed for priming in the same manner as the red. Then two coats with oil and Japan half and half, should be given, after which a coat of best medium chrome green ground in Japan and varnish half and half, striped with plain, broad, black lines, and the inside panel of fine white lines. The above information is for the benefit of the purchaser, and not the builder. E. H.

CANANDAIGUA, N. Y.

SKIM CHEESE.—Skim cheese is quoted in the market at 2 to 3 cents a pound. This will not cover the cost of manufacture, boxes, and freight. The dairymen had better have given the milk to the hogs. These quotations go to show the public estimation in which skim cheese is held. But it is said if this worthless cheese could have some tallow-oil mixed with it, it would pass with consumers as full cream cheese. We do not think that dairymen can be brought to believe this, although some authorities on dairy matters try to induce them to believe it. It is a healthy sign of the public taste, that skim cheese brings only the price it does. It is very certain that the public taste will as strongly condemn the mixture of skim milk and tallow, although the latter may be sent out as "oleo-margarine"; and equally certain that those who go into this business of adulteration, will lose by it. "Oleo-margarine" cheese can never be an honest dairy product, and dairymen, who avoid it, will retain their reputation.

How to Get Large Birds.

Many purchasers of fine stock, or of their immediate descendants, fail to secure as fine birds as the seller raises, and are unhappy. They hear of eighteen pound Light or Dark Brahma cocks, and twelve pound hens of some noted breeder, or of Mammoth bronze turkeys weighing sixty or more pounds to the pair. They order the eggs or young birds of such stock, hand them over to some servant or neighbor, who is not skilled in breeding, feeds irregularly, or regularly stints them, and at the end of six months wonder that they have not first-class birds equal to the advertisement. They think they have been cheated, and set down the breeder as a rogue. There are men no doubt in the poultry business who cannot be trusted, but there are also a large number of men who have brought capital, skill, and integrity to their business, and who would not knowingly let a poor fowl go from their yards. They sell, uniformly, stock true to name, but at so early an age that the development does not always answer expectations. A turkey does not get its full growth until the third year, but most of them are sold at from four to eight months. Ducks and hens are not fully developed until the second year, and yet most of them are sold under nine months' old. While it is true that large stock is essential to the raising of large birds, another factor is quite as essential. This is abundant feed during the whole period of growth. The grand results attained by our skillful breeders are reached by care and feed, after they have selected their stock. To make the most of a young bird, it should be fed with a variety of food at least five times a day, from daylight in the morning until the middle of the afternoon. It is well to omit late feeding to give time for digestion. Slack or full feed will make a difference of six pounds in the weight of a turkey gobbler at eight months old, which is the most of the difference between an ordinary and an extraordinary bird. Persons who buy thoroughbred young birds of good breeders should not expect to buy the skill of the breeder with his stock. That is a commodity that cannot be bought for money. It can only be gained by daily attention to the details of poultry breeding.

The Country the Place for Mechanics.

The demand for mechanics in country places is always growing. It is a mistake to suppose that carpenters, bricklayers, and masons need to crowd into a city to find employment. In the country, where a mechanic can have a few acres of land, upon which he may spend part of his time not otherwise occupied, he need never be short of work. He can keep a horse, and ride to his work, losing less time in doing so, than if he lived in a city. He can keep a cow, some pigs, and fowls, and raise, with the help of his children, a large share of his supplies. His family will have better health, and enjoy themselves much more than in the crowded city, having flowers and a garden to amuse them. They may dress less expensively, will wear out fewer clothes, and the rent will not have to be provided for every month, or if it has, it will be but a trifle compared with city rents. Farmers everywhere are improving their buildings, putting up better barns and fences, and competent country mechanics could procure profitable jobs, and could do the work at much cheaper rates than in cities. One well finished job brings others, for nothing is so catching as improvement, and our experience has been that many farmers do without new barns or houses, because of the difficulty of procuring competent mechanics at a reasonable price. There are very few good farmers now in the east or the west that are not able to have good farm-buildings, and at the present time village mechanics have more steady employment, and can save more money, if they earn less, than those who work in the cities.

VALUE OF THE BARLEY CROP.—Fears are often expressed that barley may not be a paying crop this year, because the price was high last season. This may be so if the crop is grown solely for sale to the brewers, who require a fine sample, good color, etc., and the demand is to a great extent capricious. But why depend on the market altogether? Barley can be turned into pork as well as corn. It is excellent feed for horses, and poultry, and barley meal will make beef. Why not feed the crop if it can not be profitably sold, or at least a part of it. With two strings to the bow, the breaking of one may be risked, and so we would not hesitate to grow barley, although the brewers may not want it. As it requires good farming to grow this crop, and clean culture, it is not likely that the market can long be depressed below a paying point. As a feeding material barley stands very high, ranking very nearly as high as corn. When ground into meal, and fed with cooked potatoes, it makes sweet and excellent pork, and as a grain for horses it surpasses oats, and is more healthful as a steady feed than corn.

"WEIGH, MEASURE, AND COUNT EVERYTHING," says the *American Grocer*—which is, by the way, a most useful and excellent journal, published in the interest of storekeepers. But the advice should not be restricted to grocers, as it is especially valuable to farmers as sellers and as consumers of produce. Few farmers know exactly what they sell, and a platform scale is, we regret to say, a rare piece of barn furniture. A very important thing, and one which few farmers know exactly, is the quantity they feed to their stock, and how much a bushel of grain, a ton of hay, a quart of milk, a pound of butter, or a pound of pork costs them. A knowledge of these things is necessary if the farmer would make his business profitable, and unless he weighs, measures, and keeps account of every thing used upon or sold from the farm, he can not tell whether he is working at a profit or a loss.

Rustic Work—Portable Summer-Houses.

Our very earliest and most pleasant recollection goes back to the new western home, when we little people set up mock housekeeping—to us very real—in the *rustic* play house, constructed of crooked beech limbs. It is real to-day, after almost half a century. Connected with every house, however humble, there should be something around which the young affections and memories may cluster; and to our way of thinking, there is nothing more charming, or that will live longer in memory, than an arbor or summer-house, so constructed of rustic work as to harmonize with other natural objects. These structures may be of the simplest form, and be erected without great skill or loss of time, and without expense. Modern times have developed much taste and ingenuity in constructing a great variety of rustic arbors, seats, chairs, flower-stands, pictureframes bridges, summer-houses, etc. The material, red cedar, laurel, grape vines, etc., left as nearly as possible in their natural condition, are worked into a multiplicity of forms that are both pleasing and useful. For smaller articles, the Laurel, (*Kalmia*), with its natural crooks and gnarled roots, is excellent. For large structures, such as summer-houses, arbors, and bridges, the Red Cedar is best, for it is not only very durable, but the angles of its branches are useful, and the color of its bark harmonizes well with natural scenery....For the more elaborate structures, a natural ingenuity is required to combine irregular shapes into architectural designs—otherwise there may be only a grotesque mass, quite devoid of pleasing effect. There are a few persons who make a business of manufacturing rustic work for sale, and who go out, upon call, to put up summer-houses, bridges, and the like. Recently when at Lake Salstonstall, we noticed the rustic manufactory of JAMES KING, Esq., of New Haven, Conn., where we saw at different points a large number of men and women busily engaged, under the eye of the proprietor and other skillful workmen, preparing material and putting it together in rustic form—flower baskets and stands in great variety, chairs, settees, arbors, summer-houses, bridges, etc., etc. On examining and admiring a large rustic Summer-House, all set up complete, we were surprised to learn that it was *so arranged in sections, that it could be readily taken down*, loaded upon wagons or railway cars, and sent to any part of the country, where it could be quickly set up firmly again, with the use of a few large nails only. We immediately ordered one for our own use. It was put upon a couple of common farm wagons, sent 25 miles, and in a few hours it was all up complete, just as shown in the engraving herewith, which is copied from a photograph of it. (To forestall the charge of "vanity," or of appropriating others "good looks," suffice it to say we were not *in* the house when the picture was taken; it was "the other man.") This house has already been seen and admired by many persons. Its dimensions on the ground are 9 x 13 feet; the roof projecting all around 2 to 2½ feet, covers a space about 14 x 18 feet. The hight at the plate is 8½ feet, and at the ridge, 10½ or 11 feet. The floor is of narrow pitch pine boards, and the seats along each side of narrow chestnut boards bordered with cedar. Both of these woods and the red cedar which makes up all the rest, are almost imperishable, so that the structure may stand fifty or a hundred years even. The engraving hardly does justice to the pleasing rustic appearance of the braces and other work under and around the roof. It is a most desirable addition to our grounds, which we should be very loth to part with. As above noted, Mr. King has completed, and in process of manufacture, a great variety of summer-houses and other rustic objects, large and small. The point to which we call especial attention, is the fact that the larger structures are made in easily transportable sections. Many persons who would like to adorn their homesteads with such things cannot readily collect suitable materials and bring to their own grounds the skilled workmen needed. Such persons have now only to go and see the articles they want and order them, or send for engravings or photographs or designs, and get estimates, and then have the structure made where the men and materials are concentrated, and have the finished articles forwarded to where they are to be set up. Those having time and skill, but little money, can try building themselves.

RUSTIC SUMMER-HOUSE.

(Manufactured by James King, New Haven, Conn., and sent in sections to the residence of Mr. Orange Judd. Mr. King retains the copyright of the photograph and engraving.)

The Colorado Potato "Bug."

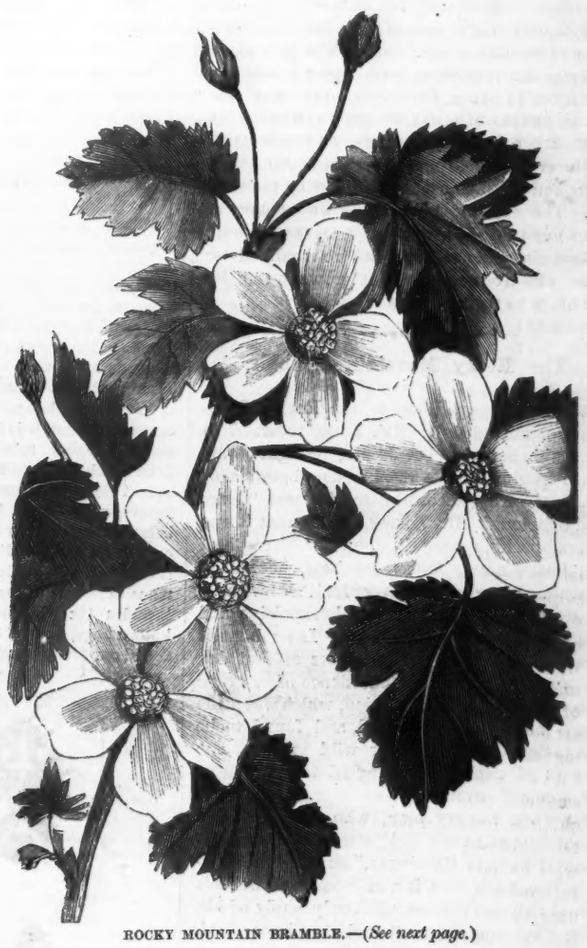
As long ago as 1864, we gave engravings of *the* "Potato Bug," and told all about it; since then we have repeated these, and have kept our readers advised of its eastward progress. It at one time came eastward at the rate of about 70 miles a year, but several causes have led to a more rapid travel, and last fall it was within about ten miles of the coast, some four or five years earlier than was at first predicted. Now it is at the coast, and has been especially destructive as far as Long Island. There is almost a procession of persons bringing these beetles to our office, as if they were something new; the mails bring them in great numbers; it would seem that all that we have said has been forgotten, and now we must at this late day repeat for the benefit of our eastern readers—for to those at the west it is an old story—the history of the Colorado Potato Beetle. As space is scarce, we make an old engraving save many words of description. If the vines had been examined in May, there would have been found here and there an insect like *d*, which probably came in from elsewhere, or may have been raised on the place last fall in such small numbers as to escape notice. This insect is of the size and shape shown in the engraving, yellowish or buff color, with 10 black lines on its back. A little later, orange colored eggs would have been found upon the under sides of the leaves,

COLORADO POTATO BUG.—EGG, GRUB, AND BEETLE.

shown at *a*. These hatch, and produce the larvæ, or grub, which, when first hatched, *b*, are small and blackish, but which eat vigorously,

and grow rapidly. When full grown, they are fat disgusting things like *c*, bright reddish in color, and with two rows of black dots along the sides. These drop to the ground, enter the earth, and in 10 or 12 days come out as the perfect insect, *d*, which goes on and lays eggs to keep them in subjection; but many persons do not know of their presence until the vines are overrun, and hand-picking not possible. The only thing then to be done is to use poison—Paris Green. Various poisons are offered as "sure cures," but they can not be any more specific name referring to the fact that the plant is used as food by the Indians. There are two species of Camassia; the one above named is found from the Rocky Mountains westward, and the other, called the eastern Quamash, *C. Fraseri*, (*Scilla Fraseri*, Gray,) occurs from

QUAMASH.—(*Camassia esculenta.*)



ROCKY MOUNTAIN BRAMBLE.—(*See next page.*)

provide for another brood. There are three broods in the year, though they may be found in all stages through the summer; the last brood undergoes its changes in the ground, and passes the winter there as a perfect beetle, and comes out in the spring to begin the work of laying eggs as soon as there any vines to work upon. The perfect insect and the larvæ, or grub, both eat. They feed on the tomato and egg-plant, as well as on the potato, and these vines must be watched. When they come they do not travel further east, but send on a deputation; they come to stay. Those who have them once, are likely to have them next year, and in future years. It is a serious matter, and must be met in a prompt and business-like manner. If the beetle—which we should have said is named *Doryphora decemlineata*, or the 10-lined Spearman—has its way, you will have no potatoes. In the western states the insect is looked upon as a matter of course, and accepted as a fixed fact; they conquer it, and have potatoes. It startles those who have never seen it before with its rapid increase, disgusting appearance, and wonderful voracity, but it can be conquered. If the insects appear in small numbers, they can be kept under by hand-picking, and at the same time destroying the eggs. This, if properly followed up, will effective than Paris Green, which we know all about, and as in all other cases, we advise letting all secret remedies alone. There has been much said against the use of Paris Green. It is dangerous and deadly, and every one should know it, but it has been used in all the western states for ten years, and no case is yet reported of any injury resulting from its poisoning the tuber. It is a case of Paris Green—or some similar poison—or no potatoes. We know (so far as any negative proof can go) that Paris Green does not injure the tubers. These secret poisons we know nothing about; they are new, having started up this spring, and have not, like Paris Green, stood the test of years of trial. For a full account of the use of Paris Green see the *Agriculturist* for June, p. 226, and observe all its precautions. Get the pure article, use it as there directed, and *see to it yourself.*

The Quamash, Bulb and Flower.

Quamash, as the Indians of the Pacific coast call a plant, which is to them an important one, is not a very pleasing name, and it sounds much better when Latinized into *Camassia*, as it was by Lindley, when he made a new genus, and called the plant *Camassia esculenta*, the Ohio to Wisconsin and southwestward. As the plants are close relatives, and both have a bulb eaten by Indians, the eastern and western Quamash have been confused by various writers. The western Quamash, *C. esculenta*, is cultivated by European bulb-growers, and is often imported by our seedsmen and bulb dealers. Though we have tried these imported bulbs for several years in succession, we have never succeeded in getting a satisfactory flower. Having long known the plant from herbarium specimens, and it being a native, we were particularly desirous of growing it, but all our attempts with imported bulbs failed, and it was only when one of our associates procured some bulbs from their native localities that we were able to have it in flower. The onion-like bulb throws up narrow leaves about a foot long, and a flower-stem one to two feet high, bearing numerous light violet-blue flowers an inch or more in diameter in a loose raceme, each flower having at the base of its stalk a bract. The engraving gives the size and shape of the flowers, but to save room, only the flower cluster and upper parts of the leaves are shown. Mr. Rand in his "Bulb Book" says it is not hardy; his experience must have been with imported bulbs, which being generally too weak to flower, are probably more tender than the native ones, as

bulbs from California stood the past severe winter near New York, and this spring flowered vigorously. The Quamash will not please those who value a plant in proportion to its showiness, as it is rather modest in appearance, though a very neat and interesting plant. In some of the valleys of the far west the plant is so abundant, that the Indians resort to them at the proper season, and the tribe—at least the female portion of it, spends some time in collecting and preparing the roots. A hole is made in the ground and lined with stones, in which a fire is built; when the stones are heated, the fire is swept out and the bulbs placed in the hole, covered with branches, and then with earth. The cooked roots are then beaten into a paste and dried to use as food during the winter. The eastern Quamash, as we recollect it, is a somewhat showier plant than the western, though not quite so large, and we would advise those who live near where it grows to transfer the bulbs to their gardens.

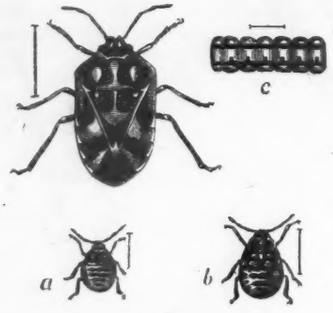
The Rocky Mountain Bramble.

When the expedition to the Rocky Mountains, commanded by Maj. Long, returned in 1821, the botanist, Dr. James, brought home dried specimens of a raspberry or bramble, of which the fruit, according to him, was "large and delicious." Dr. Torrey, finding that it was a new species, named it, upon the strength of Dr. James' notes, *Rubus deliciosus*, he not at that time knowing that every fruit met with by an explorer is, if not absolutely repulsive and uneatable, "delicious." Major Long himself greatly excited the fruit-growers of that day by his accounts of the excellence of a grape found on the same expedition, which was some years afterwards cultivated, and found to be no better than any other wild grape. The stories of explorers in regard to fruit must be accepted cautiously, as everything tastes good to a hungry man, who has lived for months on salt pork and "hard tack." In this case "Delicious Raspberry," as we may translate *Rubus deliciosus*, is a misnomer, as its fruit is not only not delicious, but only barely edible. There has long been a fine old specimen of this shrub on the rockery at the Botanic Garden at Harvard University, and when Prof. C. S. Sargent assumed the directorship of the garden, he was struck with the value of the species as an ornamental plant. It has a graceful habit, neat foliage, and in spring produces an abundance of pure white flowers upon the shoots of the preceding year. While the flowers are not very lasting, their great abundance, large size, and individual beauty, commend it to all lovers of flowering shrubs. The size and shape of the flowers and leaves are shown in the engraving, which is from a drawing by a lady, who would not care to have her skill as an artist publicly acknowledged. The shrub will probably flourish in any garden soil, but its natural habitat being rocky hill-sides, it is especially adapted to the rock garden. The seeds of the old plants at Cambridge have been saved, and sent to various gardens at home and abroad, though they do not seem to have grown very generally. Mr. Dawson, the propagator at the Arnold Arboretum, (Jamaica Plains,) has succeeded in raising two lots of seedlings, and we may expect to see the plant before long quite generally distributed.

EGYPTIAN BEET.—A year or two ago impure seed was sent out, and there was much disappointment: this season we had the real thing, from both Peter Henderson & Co., and B. K. Bliss & Sons. No one has ever eaten beets in perfection, until he has tried the Egyptians. Take them young, not over two inches through, and they cook to balls of crimson jelly, dress them with Jersey butter, and enjoy beets glorified, nor let any profane good gifts, by suggesting, much less applying, vinegar. By sowing a short row every week, we have young tender beets all the season, and provide for a supply of beet greens, which, in the hot months, when spinach can not be had, are a most welcome substitute.

The Harlequin Cabbage Bug.

Cabbage growers in the northern states think they have to contend with a sufficient number of insect enemies, but those who live in southern latitudes, have one which in both beauty and destructiveness, far excels those of colder districts—the Harlequin Cabbage Bug. This insect first became prominently known about 10 years ago, from accounts that were sent of its destruction in Texas; whether it is gradually traveling northward, or has been of late more noticed than formerly, we can not say, but it is found in Kansas, and only a short time ago we received specimens from Virginia, from which the large figure, showing the bug much over twice its natural size, was made; the other figures, *a*, the larvæ, *b*, the pupa, and *c*, the eggs, being taken from our friend Riley's Fourth Report on the Insects of Missouri. Popularly any insect is called a bug, while entomologists restrict that name to insects of the sub-order, *Hemiptera*, which includes the chinch-squash-bed—and other well known bugs, and in this disagreeable company is found our really beautiful and sweet-scented Harlequin. The eggs shown at *c*, much magnified, are in rows of about half a dozen, and appear like light green, or white, minute barrels, with dark lines for hoops, and a spot for the bung-hole. When ready to hatch, the young Harlequin pushes the head out of its barrel, and steps forth as a larva, which grows to the size of the line by the side of *a*. In this state the color is greenish and black; in these the pupa, *b*, is active, and differs from the larva in having some orange color, and other changes. Finally comes the perfect insect, which, in order to show its beautiful markings, is much enlarged. The light spots in the engraving, are of a rich orange color, and the dark parts, blue-black, all handsomely polished. As our specimens came preserved in alcohol, we could not observe the pleasant odor it is said to give off—but this is the only agreeable quality the insect possesses; it not only exhausts the plant by sucking the juices, but appears to actually poison it; the late Dr. Lincecum wrote that half a dozen mature insects will kill a cabbage in a single day. It attacks other plants of the same family, such as radishes, turnips, etc., and is one of the worst pests of the southern gardens. No remedy other than hand-picking has yet been found, and domestic fowls and birds generally let them alone. Its systematic name is *Strachia histrionica*.



HARLEQUIN CABBAGE BUG.

A Sure Remedy for the Currant Worm.

The ravages of the currant worm were extensive last season, in many places taking every leaf, and blighting every bunch of fruit. Many, after fighting the enemy with their fingers, or with hellebore applied in powder for a few days, gave up in despair. We subdued three successive generations of these worms last season, and we give our experience for the benefit of the multitudes, who are suffering this summer. The worms made their appearance in May, attacking the gooseberries first, probably because they first showed their leaves. The gooseberries were stripped of every leaf before we noticed their depredations. We applied powdered hellebore from a dredging box soon after the worms showed themselves upon the currant bushes. This is effectual, but it takes a long time to go through a row of the bushes, even in an ordinary garden. With the most faithful application some worms will be likely to escape the poison, and provide for the next generation. By constant watching we kept the enemy under, and saved a portion of the crop. Later in the season we thought of applying the poison in a liquid form, and found it not a tithe of the labor and much more efficacious than the dry. We take about two ounces of the white hellebore for an ordinary ten quart water pail. Pour a quart or two of boiling water over the powder; after standing a few minutes, fill up with cold water and apply the liquid with a garden syringe. The large nozzle is much better than the rose for delivering the liquid. You can throw a stream of water twenty feet or more through the bushes with a good deal of force, and this will distribute the spray quite evenly over all the leaves. Every worm that is touched by the liquid dies, and drops from the leaves after a few hours. Ordinarily, a single thorough application will clean the bushes and save the crop of fruit. This spring the worms made their appearance, the stock having no doubt come from adjoining gardens, where nothing was done last year to destroy them. A single application of the liquid hellebore, (and mind it must be *white* and not black hellebore), costing about five cents, and the labor of fifteen minutes, completely cleaned the bushes, not a worm is visible, and a fine crop of fruit is promised. The currant is the best of all our acid fruits, easily raised, and much needed in its season in every home. It seems a pity to give over the bushes, which are found in almost every garden in the country, to the worms, when they can be so easily saved. A pound of white hellebore, costing about forty cents, will clean any ordinary garden, and keep it clean for a season. If applied in the liquid form with a good syringe, the whole labor need not exceed an hour. There is great satisfaction in seeing clean bushes and clean clusters, and though it may be an evidence of depravity, we confess to a feeling of consolation at the sight of the enemy, stupified, coiled up, and laid out in rows upon the brown earth. We always did have a private interpretation of Cowper's sentiment about "needlessly setting foot on a worm." *

The Injury to Plants by Forcing.

BY PETER HENDERSON.

In an article written for the *Agriculturist* some time ago, I referred to a disease which was very destructive among many of the older varieties of monthly carnations, or pinks, which we have been forcing for the last 20 years. I then suggested that the trouble was in consequence of this excessive forcing, which had so lessened the vitality of the plants, that disease followed whenever the conditions were slightly unfavorable, such as too wet or too dry a soil. Since then, our observations have shown that nearly all the varieties of roses in use for forcing for winter flowers are similarly affected. About the first of May this year I planted out in the open ground Safrano, Bon Silene, Douglass, Mareschal Niel, and four other varieties, which had been used for forcing during the winter. At the same time we planted out over 30 varieties of other tea-roses, that had been grown during winter in a

cold house without being forced. The plants of both lots were all seemingly in fine healthy condition, but about July 1st we find that the forced varieties have not only made a much weaker growth than the others, but probably twenty per cent died outright. In a conversation on this subject with Mr. Miller, the well-known florist and landscape gardener of Germantown, Pa., the other day, he cited the case of a nurseryman in England, who sent out the Dahlia, "Beauty of Hastings"; the first year it was exhibited from the seedling plant, it was found to be so entirely double, as to have what is known as a "hard center." It had been freely exhibited, and being the finest of its class at that time, orders for hundreds of plants were consequently received for it. To obtain the plants to fill the orders from the limited stock, it was forced in a temperature unusually high; other cuttings were taken from the cuttings already struck, so that a dozen roots were made to produce nearly 3,000 plants. When these plants came into flower, instead of producing the fine form and double variety that had been exhibited, nearly all produced single flowers. This brought a storm on the head of the unfortunate nurseryman, who was charged with sending out a spurious variety, and he had not only to refund the money which he had received for the plants, but was seriously injured in his business standing. That single flowers were produced in consequence of lessened vitality, was shown by the fact that these self-same roots produced in the succeeding year and afterwards double flowers like the original, and for many years the "Beauty of Hastings" was known as a standard sort. Again, we remember that in the day of the grape-vine fever, the "Delaware," and some other varieties, by being propagated in a high temperature and from the young shoots year after year, became so weakened as to hardly be recognized as the original variety. Plants of rhubarb, after they have been forced, are usually thrown away as useless, and the Lily of the Valley takes years to recuperate in the open ground after it has been once made to bloom in the hot-house. If we consider that this treatment of plants, natives of temperate latitudes, is in direct violation to their natural condition, we will not wonder that they rebel against the abuse. The carnations, roses, and grapes, are hardy, or nearly so, in northern latitudes, and their nature requires a rest of three or four months. Our forcing system, now so universally adopted to produce the flowers of the carnation and rose in winter, subjects them to a treatment similar to that proper for tropical plants; and this continued violation of their natural requirements of culture, results in the evils alluded to. I never like to refer to any disease or other trouble among plants, without being able to suggest a remedy. In the carnation we would advise that, instead of propagating them as usual from cuttings made in spring, from plants that have been forced all winter, the cuttings be taken at the time the plants are lifted in fall; after they are rooted, the young plants may be kept in a cold greenhouse or frame during winter. The same plan might be adopted with the roses forced in winter, if the plants are wanted for summer flowering in the open ground. I know it is not always convenient to do so, but when it is, I think it will be found a good method to maintain the vitality of the stock.

Retinispora Plumosa Aurea.

Let no one be deterred by the name, for that is the only one it has. The Retinisporas are not yet well enough known to have received a common name, and if we translate the name of the genus, it will be "resin-seed," which is not very elegant. The genus belongs to Japan, and includes some of the most beautiful of evergreens. This variety, *plumosa aurea*, is one of the most valuable plants of recent introduction, and one of the most tractable of all growing things. It may be kept 4 inches high as an edging, or it may be grown as a tree, and everywhere it has the same compact habit, with a lightness imparted by its abundant spray. Its golden color is charming, and what is most valuable, it holds it in the coldest weather, when most variegated conifers are dull, if not unsightly. This must become very popular, as it possesses every requisite to make it so. To be sure the nurserymen charge a dollar for a plant, but if one has a single specimen, it can be readily multiplied, as it roots as easily as any plant, provided sufficient time be given it. We put the cuttings in a box of sand in the fall, and keep them in a cool greenhouse all winter, and in spring set the box in a shaded frame. During the summer they will begin to grow, and be found to have formed roots; when this takes place, they must be potted in good soil. The free use of this forms one of the striking features in the fine grounds of Mr. Hunnewell, at Wellesley, and Prof. Sargent at Brookline, and it should be used elsewhere more freely than it is, as we do not know of a more lively, attractive little tree, especially for small places. There is a variety, *argentea*, in which the variegation is white or silvery, but it is not so marked and striking as the golden.

Onions Sown in Fall.

Last year we published an article by Peter Henderson in which he gave the experience of a Long Island market gardener who sowed his onions in autumn. We gave the plan a trial in our own garden last fall, but the sowing was not made until the very end of September, and the young plants did not all make sufficient growth to stand the very severe winter, even though they were well covered. Still the success, though only partial, was sufficient to show that this method is worthy of consideration, and from the amount that came to maturity on our bed this summer, have no doubt that it will answer wherever sets are used; but where onions can be raised directly from the seed, there will be no advantage from fall sowing except for such as are to be marketed green or very early. The idea is to sow the seed in the fall at such a time as will allow the plants to form a bulb large enough to stand the winter, and yet not so large as to run up to flower the next season; in fact, to raise onion sets, which instead of being harvested, are to be left in the ground, where they will be ready to grow as soon as spring opens. On Long Island the middle of September is found to be the best time to sow; further south it should be later, and north of that earlier. Success will largely depend upon the time of sowing, and this for any particular locality can only be ascertained by experiment. The covering should not be put on until cold weather has stopped the growth of the bulbs, and may be of leaves, straw, marsh hay, or other litter. Leaves applied while it is snowing will not blow about.

Cuttings in Summer.—Those who have never tried it, will be surprised at the ease with which a great number of flowering shrubs and other plants may be propagated, with the simplest apparatus. A frame of any convenient size, made of four 6-inch boards nailed together, and a screen to cover it, are required; this screen may be a piece of cotton cloth, tacked to a frame made of laths or other light strips; its object being to shade and to keep in the moisture. Set this propagating frame, where the soil is light and sandy, in a place where it will be shaded in the heat of the day, and put in cuttings made from half-ripened wood of all kinds of shrubs, cuttings of geraniums, and other things of which it is desirable to have small plants. Keep the earth within the frame moist, and raise an edge of the screen an inch or more during the hot part of the day. This is a rough way, but it will make many plants with little trouble. All shrubs will not take root from such cuttings, but many will.

Chrysanthemums.—These bloom so late that they are apt to be forgotten during the summer. The branches break off very readily, and should not be allowed to get too long. Caterpillars come at this season, and though few, are very destructive. —Hand pick them. If the black aphis appears, use tobacco water, applied freely with a syringe. Keep all choice kinds tied up to stakes.

About Strawberries.

The strawberry does not appear to have been found as yet, as cultivators are still trying, and new ones still come. Growers of new varieties seem to be working for two different ends. One class is striving for a berry that shall have all the good qualities of the Wilson and be a better fruit, while the other is working for large size and high quality. A few years ago we kept all the varieties of any reputation, and had a large show of vines with a miserable show of fruit. It was too much work to keep up such a collection, and as Doctor Hexamer, who is in the business, does this, we turned the whole lot under, setting out enough well tested sorts to give an abundance of fruit, and confining our experimental plants to such new varieties as we had not before grown. The soil, a very light and sandy one, was well manured, and in the spring of last year, ('74), rows, 180 feet long were set, one with "Charles Downing," one with "Seth Boyden," (No. 30), and one with "Kentucky." These were to supply berries, and well they did it, for we had more than we could afford the time to pick for use or to give away. A part of a row was set with "Black Defiance," to have a first-class berry to compare others with, and to give visitors a taste for once in their lives of a good strawberry. The unfortunate people who buy their fruit do not know what a strawberry is. We may remark that it is a great pity that "Black Defiance" doesn't carry better, but as an amateur berry on our soil, we do not know its equal. Other rows are set with trial varieties, and most of them have been a trial, some not giving more than a berry to a plant. All talk about strawberries must be with reference to particular soils. As an illustration of this, the Rev. E. P. Roe, author of "Play and Profit in my Garden," exhibited in our office windows several successive lots of the "Monarch of the West," which were immense as to size, and wonderful as to productiveness. This same "Monarch" behaved in so unkingly a manner on our grounds that he would have been deposed had we not seen Mr. Roe's berries, for it was quite inferior to either Charles Downing, Seth Boyden, or Kentucky, in size and every other quality. We shall try it another year. Then there was the "Champion," which from the grounds of the grower made such a sensation two years ago, a small, miserable thing with me, and to use a favorite expression of Solon Robinson, "Sour enough to make a pig squeal." The "Late Prolific," which does so well in some places, and Kinney's No 10, a great bearer at Worcester, make as fine vines as one would wish to see, but with me not worth garden room, and so with others of less note. Take it for all in all, if there is *for our soil* a better berry than "Charles Downing," we desire to make its acquaintance. We have had it ever since good Mr. Downer first sent it out, indeed before it was on sale, and for these six years or more, it has been the same fruitful, excellent berry, and to us on light land, what the Jucunda used to be to Mr. Knox on his heavy clay. The ladies like "Seth Boyden" better, as it is larger, and sweeter, but it does not hold out so well as "Charles Downing," and lacks in flavor. "Kentucky" has its good qualities; with us it is a few days later than the others, but nothing like ten, or even six days, as it is elsewhere. Its lack of color and indifferent flavor may perhaps be offset by its lateness and productiveness. Of the new berries that have been sent, one from Mr. E. W. Durand, Irvington, N. J., was simply astonishing as to size, and of an excellence rarely seen in large berries. We do not know if it has a name. A new variety called the "Crescent," is making a sensation about New Haven, Conn. It was raised by Mr. William Parmelee, and specimens sent us by H. H. Smith, arrived in fine condition, from which we infer that it will carry well. As it came to us it was a sprightly, juicy, but not high flavored fruit of good size and fine appearance. Its yield is represented as something wonderful, and we regret that we were unable to accept an invitation to see them in the field, the only place to judge properly. We evidently are not at the bottom of the strawberry busines yet.

THE HOUSEHOLD.

☞ *(For other Household Items, see "Basket" pages).*

Some Household Conveniences.

BY L. D. SNOOK, YATES CO., N. Y.

KNIFE CLEANER.—Housekeepers generally have no more facilities for scouring cutlery, than is afforded by a rag and pounded brick or sand-stone. While

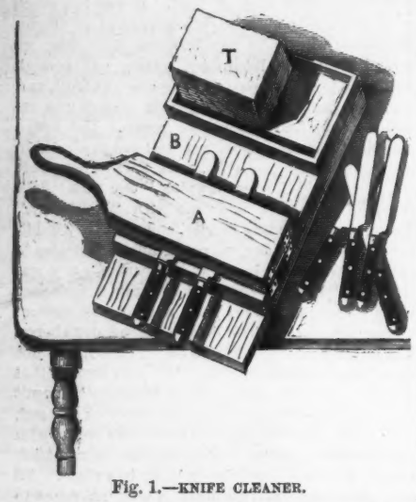


Fig. 1.—KNIFE CLEANER.

knives and forks can be cleaned in this way, there is an easier and cleaner method of doing it. A convenient home-made knife cleaner is shown in the engraving, fig. 1. *B* is an inch and a half board, 10 inches wide, and 18 long, with three inches of one end dressed down to half an inch in thickness. *A* is a lever 14 inches long, one inch thick, and four wide, with one end hinged to the side of the board, as shown in the engraving. *T* is a prepared scouring or Bath brick, such as is sold at the drug and grocery stores. To use the cleaner, fold the lever over backwards, and scrape about a teaspoonful of the brick upon the lever bed, place one or more knife blades on the powdered brick, and with the left hand press the lever firmly on them, moving the knives back and forth with the right hand. Use the polish either wet or dry. A piece of spongy leather may be nailed on the top and bottom of the lever, the upper piece to be used for polishing, after the knife has been scoured, washed, and wiped, and to be wiped lastly, with woolen or cotton flannel.

A VOLDING IRONING TABLE.—An ironing table should be abundantly long, and for the use of most

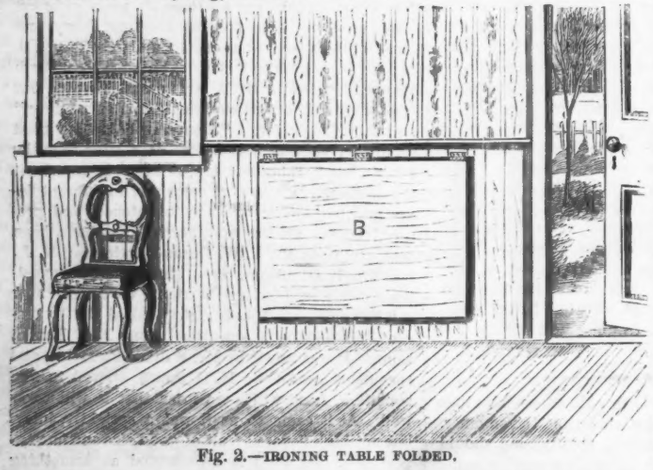


Fig. 2.—IRONING TABLE FOLDED.

persons, six inches higher than the common dining or kitchen table. The surface of many tables, when used for ironing, is sadly disfigured by the hot iron, which blisters and dissolves the varnish. A very cheap and extremely convenient ironing-table is shown in fig. 2; it is made by securing to the wainscoting, or directly to the wall, with hinges, the board, *B*, which is three and one-half feet wide, and five or six feet in length. The board is here shown folded down, entirely out of the way. The manner of folding and securing the legs, is seeen in fig. 3. One leg is hinged at each outer corner of the board, and when folded, one end of the clasp, *P*, is turned over them, as shown, keeping them from sagging, and always in place when the board is not in use. The table is easily secured to the wall of any room, and could be used in a well ventilated shed or summer kitchen in summer, and in the regular kitchen in winter.

Home Topics.

BY FAITH ROCHESTER.

Can Washing be Made Easy?

I read of wealthy people in foreign lands who think it a sign of poverty to wash oftener than twice a year, and then they devote a week or so to the job. Only two washings in a year would suit us pretty well, if they were only like our usual washing days; but since we can neither be comfortable nor healthy without clean clothes and frequent changes, we would not like to wait longer than one week for our soiled pieces to accumulate, for, even then most of us find the task of washing them a hard one.

"If you have one of the very best washing machines"—suggests the masculine sympathizer.

But I have my doubts—because, you see, none of the machines will wash clothes clean without soft water, and plenty of it.

"Use boiling-hot suds," they say, and that we cannot do when we use our own hands. But if a large washing is to be done with boiling-suds, somebody must put a good many pailfuls of water

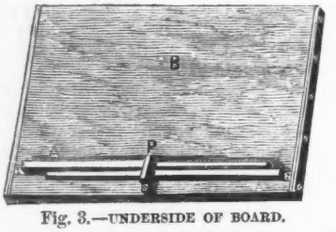


Fig. 3.—UNDERSIDE OF BOARD.

over the fire to heat; for washing-machine directions also bids us be careful not to put too many pieces into the machine-tub at one time—not more in quantity than two sheets. "A new broom sweeps clean," and the new washing-machine is often much praised, while the novelty of it makes the men folks take an interest in its use. The thing is often cumbersome, and when the washing is done by one hurried woman, she will sometimes bend her back over the old-fashioned wash-board sooner than get the machine out and put it away, and do all the lifting of water besides.

Plenty of soft-water, easily conveyed to and from our boilers and tubs—when everybody can have that—I think, with our machines, and soaps, and washing fluids, washing will not be a very difficult or a very disagreeable business. One of the first necessities in house-building, it seems to me, is a large cistern for rain-water, unless the well-water is soft, or a spring supplies all the soft-water that is needed. The cistern-pump should be set high, upon a sink or otherwise, so that water could be pumped by means of a trough, into tubs setting upon a wash-bench. This might save some lifting, and if this trough would convey water from the pump to the boiler, in place over the fire, so much the better. In city houses, and in some country houses, the occupants may have the advantage of stationary tubs, which can be filled and emptied without any lifting, by means of water-pipes. If I should ever have to earn my living as a hired household servant, I should have the "impertinence" to inquire after the facilities for washing.

"Slighting" the Ironing.

"I never learned how to slight my work," said my very neat and nice neighbor.—"More's the pity," thought I, as I looked at her pale and sad face. I really think it is hardly more important to learn how to do work well than it is to learn how and when to slight one's work. We don't ask any one to do our washing less carefully. The clothes cannot be made too clean—though to be sure they might be all worn out by hard and indiscriminate rubbing on the wash-board. If we could have everything as we choose, we might say that our clothing cannot be ironed too smooth, any more than washed too clean; but clean it *must* be, for health's sake, whether it is smooth or not.

"It took me two hours to iron that pair of cassimere trousers," said my neighbor. I can see them still, though they are hundreds of miles away—that pair of gray cassimere trousers hanging freshly-ironed upon a chair. It is hardly exaggerating to say that they looked "as good as new," and not at all as most washed and ironed woolen trousers look. That was work which it paid to do carefully. Every seam had been nicely pressed open, then the whole had been ironed while it was damp, pressing it heavily and carefully on the wrong side, pulling it evenly into shape as the ironing went on. The woman who ironed those trousers can not bear to leave a wrinkle anywhere in anything she irons. She could not rest if every brown towel was not folded exactly even, and pressed quite smooth in every part, and her conscience would have condemned her if she had not turned every sheet all about, and pressed her hot iron over every inch of it. That is labor which does not pay, it seems to me. I have not enough of royal blood in me, and few of my acquaintances have, I fancy, to feel any discomfort from such semi-wrinkles as remain in the lower half of a sheet when it has been doubled and ironed so that only the upper half came in contact with the flat-iron. It is the same with my under-garments, and I would not thank any one for spending their precious time ironing the backs of night-dresses, etc. Not that I consider the fronts of any more importance than the backs, but as the garment is laid out upon the ironing-table, the front is naturally uppermost, and when that has been ironed, the whole body is smooth enough for comfort and for good looks.

Of this creed I am not in the least ashamed, though earlier in life I supposed that such ironing was only to be done secretly when in haste, and never to be told upon the house-tops. You see, my friends, we cannot—we who have souls as well as bodies—do all that we want to do each day and every day. We have to make constant choice between things of more or less importance. We want to keep our houses well, and we want to take good care of our children, and we want—oh! ever so many things that we can't have in these busy years, and we must go to bed when bed-time comes, for the sake of health and good-nature, and no votes of ours can put more hours into the day, or more days into the week.

When I give a hired girl instruction about the ironing, I tell her to iron very carefully all of the outside garments, not because they are better than the under-garments, but because wrinkles in these offend the eye. It certainly makes life more pleasant to have those clothes that meet the eye look as smooth as their texture naturally permits—to have them look as good as new. As for the under-garments, they are so ironed that as they hang upon the clothes-frames, or lie folded in the drawer, they look clean and smooth, and nobody finds any trouble in their use. If the children should say to

me, (as they never think of doing,) "mamma, you don't iron our clothes well enough now-a-days," it would not cause me one tithe the pain it gives me now to hear them say, "mamma, you hardly ever read us a story now, you are always so busy."

[The Dress Reform Corset-Waist and Skirt-Supporter.

This claims to be "a corset for those who cannot wear corsets." Like the waist of the "Emancipation Suit," it supports the bust without the use of bones or steels, and its waist form, and skirt attachment, make it a good skirt-supporter, relieving the hips, and making the shoulders do the burden-bearing. For those who prefer to have the time-honored chemise, or who have become attached to the use of a long-sleeved high-necked shirt, this corset-waist commends itself, but no one who has tried the emancipation suit, or the chemile, or the chemilette, or the chemlin, (or any kindred combination-garment,) is likely to forsake its simplicity and comfort for either low-necked waist or corset.

Keeping a Cow.

I may make some note of my dairy affairs, even if they are small compared with those of Ogden Farm. "Small business," you may say, when you learn that I have only half of the milk from one cow. But from that milk I feed my present family, (only myself and four children), with all the milk and cream and butter and cheese that we want, and really I am glad I have not more milk to take care of. After buying milk for two years, from two to three and a half quarts daily, it seems very good to have from seven to eight quarts per day almost for nothing. The man who milks the cow, while Mr. R. is absent, has half of the milk. I had some notions of my own, held rather vaguely until last spring, when some anxiety as to the treatment of my own cow and calf set me to reading upon the subject, and those ideas were confirmed then by my reading, and since by my experience. It seemed to me that if feeding a cow on corn had the effect to lessen the quantity of milk, *very coarse* corn-meal, (too coarse to get one quarter of it through a common sieve, but all the feed we had for a few weeks), would have the same effect, though in less degree. I found that when I mixed the cow's mess myself, scalding the meal with boiling water, and leaving it to soak a few hours before it was fed, the quantity of milk and cream was increased, and it was better still when the mess was half bran and half meal. Another notion which I cannot give up is about the time of milking. It seems to me that the hours should be regular, dividing the twenty-four hours somewhere near evenly. If a cow is milked before six in the morning, she should not be allowed to go unmilked long after six at night, and when a cow milked early in the morning, goes unmilked until after eight o'clock at night, night after night, I believe that she is injured as a milker in a way that she will not recover from, at least not until after next calving. Sometimes our former bossy, "Gentle," roaming in the woods and marshes for her food, would fail to come home at night, and when she was milked sometime next forenoon, the milk was much poorer than usual in quality, and the regular quantity was always decreased from that time, and again after each time of lying out all night. So when I see a cow stand lowing to be milked, and worrying to get to her calf, from the time of home-coming at about six o'clock, until a very industrious man cannot see to work any longer in the long days of June, I feel a good deal of pity for both cow and calf, and some pity for their owner, as I believe that such treatment injures the milk at the time, and lessens it for the future. If I am mistaken it would be more comfortable to know it.

At each milking I set away a part of my portion of the milk for butter-making, but I make scarcely a pound of butter each week. Of course this has to be "churned" as often as twice a week, and it might seem scarcely worth the trouble. But this amount of butter is quite sufficient for the children and myself in the summer, and the trouble of making it is small. I skim the pans carefully, mixing as little milk as possible with the cream, stirring each skimming thoroughly with the rest in the jar, so that the small mass of cream is always of even quality. I keep the cream as cool as I can (during warm weather), and when I go to churn it I have to spend but a few minutes before the butter comes. It is usually ready to work over in less than fifteen minutes, sometimes in five minutes. The churning is done in a quart bowl, with a tablespoon, and though the butter may not be "gilt-edged," it seems to us as good as we are able to buy in this vicinity. The buttermilk is carefully divided among three children, who like it better than any sweetmeats.

Probably more butter would be called for, if the fresh milk was less prized as food, and if bonny-clabber and Dutch-cheese had smaller attractions. My own supper is sometimes nothing, and sometimes simply a saucer of soft Dutch-cheese, made by draining the loppered milk for a few hours without heating or squeezing it, salting it a little, and mixing it with sweet cream. It is nutritious and palatable, and much more easily digested than pressed cheese or Dutch-cheese (or cottage) that is hard from having been heated before draining.

All this is not worth telling to dairymen, but there may be other women who might get milk and butter and cheese as I do, if they could get some one to do the milking "on shares."

A Cork Puller.

In former years we have mentioned the difficulty of putting old hoop-skirts to any useful purpose. Next to these as difficult to dispose of is an old umbrella. It seems as if there might be some use to which the combination of wires and sticks might be put after they had ceased to serve to ward off rain and sun, and we shall be glad to hear of any useful purposes an old umbrella may be made to serve—except that of a support for climbing plants, which we figured years ago. A correspondent, whose name we have mislaid, sends us a description of the manner of making a puller for extracting a cork from the interior of a bottle, from an umbrella wire. In fig. 1 is shown the end of an umbrella wire at the left-hand, and the manner in which the forked end should be bent is given at the right. Fig. 2 gives the whole wire, with the upper end bent down to make the thing complete. It is bent down as in the left-hand cut, and then spread as shown at the right-hand. The two legs are pressed together to go into the neck of the bottle, and when within they will spread far enough to catch the cork, which, by turning the bottle upside down, will be brought between *c* and *d*, and by pulling the whole out the two legs will be so compressed by the neck of the bottle as to hold the cork firmly and thus extract it with great ease.

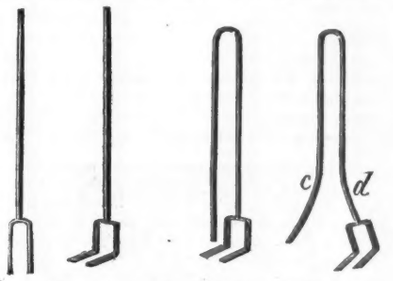


Fig. 1. CORK PULLERS. Fig. 2.

Household Queries.

CHECKERS.—"R. L. B." To give the "scientific method" of playing this game, would require an illustrated treatise, for which we have not room.

PASTE FOR PAPER HANGING.—"G. H.," Dunn Co., Wis., asks for a recipe for paste that will hold. We have never found any trouble with good flour paste. The difficulty is probably with the wall, but as we are not told what kind of a wall has given trouble, it is difficult to advise. Glue size will generally remedy the worst cases; pour cold water over half a pound of glue, and let it soak 12 hours, or until thoroughly softened, then pour on enough boiling water to make a gallon. If the glue was properly soaked, it will dissolve at once; if any remains, heat until it dissolves. With this go over a new wall, or an old white-washed one that has been thoroughly swept with a stiff broom, and the paper will stick if the paste is good. Some use alum in the paste, to make it more adhesive. We have never found it necessary. Here is a recipe for paste with alum. Four lbs. of sifted flour, and two oz. of powdered alum, are to be mixed with *cold* water, to form a stiff batter with no lumps. Have ready a kettle of *boiling* water; let one stir rapidly, while another pours on the boiling water gradually. If this is properly done, the flour will be thoroughly cooked, and change color. This quantity of flour will make a common pail ¾ full. If found too thick when cold, thin with cold water, stirring thoroughly. Always use cold paste. It should be thin enough to work readily with the brush. Experience is the only guide. If paste has to stand for some time, cover the top with a layer of cold water, to prevent a hard skin from forming on the surface. If this does not meet the case, let us know.

AUTUMN LEAVES.—"Mrs. C. D. C." We will try not to forget your request about autumn leaves, but it would be rather early to talk about them now, even if we had room. We made some experiments with them last fall, and think we have hit upon a method of treating them, far superior to oiling, varnishing, or any other that has been published, and we shall be glad to have others know about it.

There are some questions which come to us that may be answered in many ways, and in such cases we like to call in the advice of our housekeeping friends, who will answer about

MINCE MEAT.—Here is a case which will appeal to every mother. A little girl who is only 12 years old is learning to cook, and she hopes that we will publish, "before Christmas," (bless her little heart), a recipe for a mince that will keep. Her mother's is a very nice mince, but does not keep well. Let us help her to one that will.

BLACK DYE.—One of our housekeepers wishes to know the best black dye, but she does not state whether for cotton, woolen, or silk stuffs.

Oat-Meal.

Probably the principal reason why oat-meal is so little used in this country, is the difficulty of procuring it outside of cities. There is not enough demand to warrant country mills in making it properly, or for country store keepers to keep it on hand. Even in cities it is difficult to always find it of the best quality. Indian-meal answers so many of the purposes of oat-meal, that our ancestors readily adopted it in place of the oat-meal they had known at home, and the use of which is mainly confined to those Europeans who will not give it up, and those Americans who have been advised to take it as an article of diet. In cities the best oat-meal is imported, and the large stores keep both Irish and Scotch. Oats do much better, and give a larger grain in England, than here, and in Scotland and Ireland they are better than in England. The imported meal is kiln-dried, and will keep a long time without spoiling. The oat, like Indian corn, requires long cooking in order to break the starch cells, and render it digestible; for this reason it is rarely made into bread and cakes, but is almost universally cooked with water, in the form called porridge in Scotland, and mush with us. To prepare it in the best manner, a "farina kettle," or an inner kettle set in an outer one containing water, is the most convenient; it can hardly be cooked too long. To those unaccustomed to it, the mush has at first a slightly bitter taste, but those who persevere soon become very fond of it. In the form of mush it may be eaten hot or cold, with butter and sugar, milk or cream and sugar, or in any of the ways in which other mush is eaten. It can not be recommended as a cheap substitute

for wheat or Indian corn, but it makes a pleasant change, and some invalids find it easier of digestion, and more nutritious than any preparation of either of these grains.

Eating Fruit.

We hardly know how to account for the popular impression that still prevails in many rural districts, that the free use of fruit is unfriendly to health. It has much to do with the scarcity of fruit gardens and orchards in the country. As a matter of fact, cities and villages are much better supplied with fruit the year round, than the surrounding country. There are hundreds of farms, even in the oldest parts of the land, where there is no orchard, and the only fruit is gathered from a few seedling apple trees grown in the fence-corners. The wants of cities are supplied not so much from the proper farming districts, as from a few men in their suburbs, who make a business of growing fruit for market. The farmers who raise a good variety of small fruits for the supply of their own families, are still the exception. The villager, with his quarter or half-acre lot, will have his patch of strawberries, his row of currants and raspberries, his grape vines and pear trees, and talk intelligently of the varieties of these fruits. His table is well supplied with these luxuries for at least half of the year. But there is a lamentable dearth of good fruit upon the farm from the want of conviction that it pays. It does pay in personal comfort and health, if in nothing else. The medical faculty will bear testimony to the good influence of ripe fruit upon the animal economy. They regulate the system better than anything else, and forestall many of the diseases to which we are liable in the summer and fall. A quaint old gentleman of our acquaintance often remarks, that apples are the only pills he takes. He takes these every day in the year, when they can be found in the market, and fills up the interval between the old and the new crop with other fruits. He has hardly seen a sick day in forty years, and pays no doctor's bill. We want more good fruit, especially upon our farms, and the habit of eating fruit at our meals. This is just one of the matters in which farmers' wives can exert an influence. Many a good man would set out fruit trees and bushes, if he were only reminded of it at the right time. One right time will be this autumn—at least in all but the very coldest parts of the country. A few dollars invested then will bring abundant returns in from one to five years. It is more intimately connected with good morals, than our philosophers think. With good digestion it is quite easy to fulfil the law of love.

BOYS & GIRLS' COLUMNS.

August.

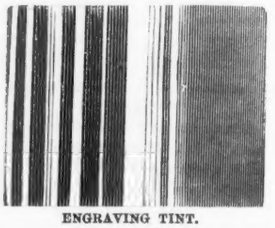
Whew! Here we are at the last month in summer! Already it is August, a name reminding us of another of those Cæsars you will read about when you study history. We told you that July was named after Julius Cæsar, so when Augustus Cæsar came to be consul, a month had to be named in his honor. The month had a very good name; the Romans called it *Sextilis*, as it was the sixth month of their year. In the old way of dividing up the months, every other month had 31 days, and the alternate ones had 30, besides February, which had 29, except in leap year, when it had 30. In this arrangement July had 31, and August 30 days, but Mr. Agustus Cæsar, no doubt a pompous and disagreeable old fellow, had no idea of playing second fiddle to Julius Cæsar. The month named after J. C. had 31 days, and why should the month named after him, A. C., have any less number of days? Augustus wouldn't stand it, he must have another day to that month of his, or he'd make "Rome howl," so to keep the old fellow quiet, they gave him another day to his month. And where do you think they took it from, from the months which had a plenty?—No, they just robbed poor little February, which was already the poorest of the months, of a day, just to please Augustus, and now February has to get along most of the time, with only 28 days. Isn't it strange that with all our modern learning, we depend for our divisions of the year, upon the whims of those old Romans? This month we have the end of the Dog Days. These are not, as many suppose, days in which dogs are apt to go mad, but because the dog-star (Sirius) and the sun used to rise at the same time during the hottest part of the year, on the Mediterranean, and the great heat was supposed to be due to the evil influence of the Dog-star. But now that astronomy is better understood, it is known that this star does not rise with the sun with any regularity, and has no influence whatever in making the days hot. Indeed it is not exactly settled when the dog-days are, but most almanacs put them down from July 24th to August 24th. But really the term dog-days has no very definite meaning, and there is no more reason for being afraid of dogs on those days, than in any other. If the idea that dogs are more liable to disease on those days, than at any other time, will lead people to look after the comfort of the animals, it will do no harm. See that dogs which must be kept tied up, have a cool place, a plenty of water, and a run whenever in is convenient.

When is a boat smaller than a bonnet?—When she is cap-sized, of course.

Rabbits.—"Herbert." Where young rabbits have all the green food they want, they are apt to eat too much of it, and this brings on disease. Old rabbits are not troubled in this way, and do not need so much care. Give more dry food, such as grain and clover-hay, and fewer cabbage leaves and other green stuff.

How Engravings are Made.

In June we told you, in answer to our Michigan boy Charles, and his sister, something about the way in which wood engravings were made, but somehow omitted to finish the story in the July number. If you look back to what was said in June, you will see that the untouched block prints black, where there are grooves cut in the block they will print white, and where there are a number of fine grooves close together the block will print a tint, and this tint will be lighter or darker as the spaces between the grooves are narrower or wider, and by a careful management of this the engraver can produce all the way from a very dark tint, almost solid black, to a very light gray that is nearly white. Now you want to know how the picture gets upon the block before the engraver begins to cut it; indeed, this was one of the things that Charlie and his sister were most troubled about. To make a block ready to be printed in these pages, requires the work of two, and sometimes three persons. We told you about the box-wood in June, and how it was prepared of the proper thickness and of any needed size by the box-wood worker, who makes one surface very smooth. Now let us take the first cut on page 300 of this number, which is a yoke for a bull. The editor who wrote the article makes with pencil on paper a sketch, showing what he wants; it may be a coarse sketch, but gives the idea, and he puts down the proportions. In this case the editor designs the picture. Then the draughtsman takes it, and picks out a block of the right size; if the block does not seem quite smooth enough, he rubs it with a flat piece of pumice stone and water until the surface suits him, and lets it dry. The box-wood is yellow, so he whitens the surface to make his drawing show plainer. There are several ways of doing this, one of them being to take a glazed card, such as business cards are printed on, and which have the surface thickly coated with white paint (white lead), he wets the card and rubs it on the block, and the paint rubs off of the card on to the block, and by a little care he can get the surface of the block nicely coated, so that when it is dry it is almost as white as a piece of paper. He then, with a very fine-pointed lead-pencil, draws the yoke of just the right size, making his lines just as they should be in the engraving. This goes to the engraver, who cuts away all the wood but the lines the artist or draughtsman has made, and when the engraving is printed, it will show on the pages in ink exactly what was drawn on the block in pencil. Here the engraver has only to follow the lines that were marked out for him. Now look at the upper right-hand cut on the same page (300)—the rear view of a chicken coop—you will see that a large portion of the coop is shaded, or covered with a tint, and if you will look closely, you will see that the shade or tint is all made with fine lines, just as is shown at the left-hand of fig. 3, last June—but as some of you may not have the paper at hand, we give it here again. Now, in drawing this block, the draughtsman did not draw all those lines, but he rubbed up some India-ink with water, and took a brush and painted that shade on the block just as dark as he thought it should be; so when it went to the engraver's hands, it had no lines for him to follow, but was just a "wash," as they call it. Here is where the engraver shows his skill, in knowing what lines to make, so that the block shall print that shade just as it was put on by the artist. It is not very difficult on a plain thing like this, but suppose it is a person's face, or an animal's body, where the shade is constantly varying, here light, and there heavy, with only a wash which the engraver has, so to speak, to interpret by using lines. You will see from this, that to be a good wood engraver, one must be able to do something besides follow the lines that are drawn for him—that is a kind of mechanical work and is easily learned—but he has to be something of an artist; his engraving is all lines, and nothing but lines, that are finer or coarser, near together or far apart, and he must know just what kind of lines will make an engraving that will print exactly what the artist has washed on with a brush. The ability to do this makes all the difference between good and poor engravers. There is not space to tell you now how engravings are copied; that must wait until another time, but there is one thing that we must tell you about. The artist must recollect that his drawing will be *reversed* in printing, and if he were designing a label for tomato cans, and drew upon the block TOMATO, the engraver would follow the drawing, but when the label was printed, it would read OTAMOT--which would be rather puzzling. Even the best artists sometimes forget this, and we find, when it is too late, that a man is on the wrong side of his oxen, or a woman is milking the cow on the wrong side, and people write letters asking if that is the way we drive oxen, or milk, and make fun of it. It serves us right, too, for we, who have so much to do with engravings, ought to keep in mind the fact that everything is reversed in printing an engraving.



ENGRAVING TINT.

The Doctor's Talks.—About Click-Beetles and other Insects.

Some one sent me a beetle the other day, and wished to know what it was, and "all about it."—As it is an insect which is not very rare, (nor is it very common), I thought I would have its portrait taken, so that when you find one like it, you will know what it is.—"Oh yes, I shall know that beetle when I see it. I can tell it by its *big eyes*."—Some of you may say, and a great mistake you would make, though a very common one, as those large black spots do look very much like eyes. No, they are not eyes; just see where they are placed. An insect is no more likely to have eyes there, than you are to have them on your shoulder blades. Its eyes are in its head, and are those little roundish bunches you see just under where the horns or feelers join the head. The engraving shows the insect of the natural size, and you can see that it is one of the largest beetles in the northern states. It is black, with its wing-cases, the two hard shell-like covers that form the most of the back, marked with fine sunken lines or furrows, and sprinkled with white dots; the chest or thorax, the part where the "eye" spots are, is covered with a whitish mealy kind of powder, all except the spots themselves, which are very black and have a velvety look. If you should find one of these beetles, do not be afraid of it, as it is not able to harm any one. If you are afraid, you will not see one of the most interesting things about it. Place the insect on the table on its back; it may kick a little, but will not be able to turn itself over by the help of its legs. Watch it—"Click!"—and up it goes with a bounce, several inches from the table, and if it alights on its feet, it is all right, and can travel, but if it falls upon its back, it will presently try again, and keep on bouncing until it comes down right side up. It is a very sudden jerk that it makes, and what is curious, it has an arrangement expressly for making it. If you examine the under side, you will see at the bottom of the chest, a little blunt point, just between the first pair of legs, right behind this is a sort of sheath or cavity, in which the point rests. The insect bends back its head and chest, so as to unsheath the point, then suddenly straightens itself so that the point goes into the sheath, like the stroke of a little

CLICK BEETLE.

hammer, and with such force as to cause the bounce. From its striking such a blow, the beetle is in some parts of the country called the "Blacksmith," and those ignorant people who believe in signs and omens, say that if one of these "Blacksmiths" comes into a house, there will be a quarrel and the people in it come to blows. What nonsense to tell such stuff about an innocent insect. Its most common name is "Click" or "Spring-Beetle."—"Where does it come from?" you will perhaps want to ask, and it is a very proper question. Whenever you see a perfect insect, always try to find out what it formerly was. I think I told you once, and if I did, it will bear to be repeated, that there are four stages in the life of an insect. The egg, the larva, the pupa, and the perfect insect. In beetles and butterflies, and some others, the larva is very unlike the perfect insect; the larva of the beetle is a grub or maggot, some call them worms, and the larva of the butterfly is a caterpillar. In the grass-hopper, chinch-bug, and some others, the larva is much like the perfect insect, but smaller and without wings. So the grubs and caterpillars, when they are full grown, make cocoon or chrysalis, and become what is called the pupa, which is usually quiet and as if dead; some insects remain in this way all winter. The pupa of the grass-hopper, and some others, is quite as lively as the larva, and only to be told from it by those who examine very closely. These are the changes that you are to look for, and if people only knew so much as this about insects, they would be able to destroy the hurtful ones much better than they do.

A gentleman called on me some months ago with a great discovery. He had found out the cause of the cotton-worm, which destroys so much cotton in the southern states. He had some cotton-seed which had been put away for some years, and in it were many little beetles, or weevils. "There," said he, "that's the cause of all the trouble, these things turn into cotton-worms, and if you tell them to burn the cotton-seed, and not use it for manure, they will have no more cotton-worms."—I could not convince him that these were perfect insects, and could not turn into anything. I don't believe one of you would make such a mistake....Well, to get back to our beetle. Its grub is over two inches long when full grown; it is reddish-yellow, with a brown head; it usually lives in old apple trees, and feeds upon the wood. Perhaps you would like to know about the scientific name; there are several hundreds of these click beetles, and the genus to which they belong was named *Elater*, which is a Greek word for leaper, and this one, from its eye-like spots, was *Elater ocellatus*, but there are so many, that they have been divided up, and more recently this goes by the name of *Alaus ocellatus*....This insect talk is already too long, but I want to say a word about some other click-beetles. They are all much smaller than this, and often dark-brown, or sometimes black. Some of them fly into the house in the evening, to get at the light. You can tell them by their click, when held, or laid upon their backs. The grubs of some of these are among the most destructive insects of the farm or garden, and are called "wire-worms." Another thing which is not a true insect, but a sort of millipede, is often but very incorrectly called wire-worm; this has more legs than you would like to count, while the true wire-worm has only six legs near the head, and two little ones near the tail. The grubs live for several years in the ground, and do much mischief....The celebrated fire-fly of the West Indies, or *cucujo* (pronounced coo-coo-yo), is a close relative of our click-beetles, and somewhat larger than the one figured; it is dark-brown, and in place of the black eye-like spots, carries two bright lanterns. Yes, regular lanterns, with a light inside, a light like that you see in the fire-fly or lightning-bug, only many times stronger than any fire-fly you ever saw, and besides this there is a spot underneath the body that gives light. If one of these insects is held quite near the paper it gives light enough to allow you to read fine print. When I was a boy a friend brought me a lot of them in a box from Cuba; I kept them all summer, and had a grand time with them.—I can't now tell you more about them, except to mention two curious uses the West Indians make of them. They have a very narrow waist, so that a thread can be passed between the two halves of the body, and they may be tied or harnessed without injury. The women fasten them in this way into their hair, and upon their dresses, and thus make a brilliant display at night. The Indians, when they travel at night, tie a cucujo to each great toe, and thus are enabled to see where to tread.—So much for Click-beetles. THE DOCTOR.

An Intelligent Cat.

A writer in an English magazine for little folks, tells some wonderful stories about his daughter's cat, "Topsy." We give you two of them, in the hope it will call out some cat stories from our boys and girls. "One afternoon Nelly, who is only three years old, being tired of playing with her doll, came to mamma to be nursed. Mamma took her upon her lap, with the doll in her arms. Presently Nelly went to sleep, and let the doll fall; when she woke up again, mamma looked down on the hearth-rug, and saw Topsy lying there nursing Nelly's doll. He had got one of his fore-paws behind dolly's head, and the other one round its waist, and was holding it just as he had seen Nelly do. Perhaps he knew that a doll was meant to be nursed, and as Nelly was not doing it, he had better try; at least it seemed like it, don't you think?

"You know we had some very cold weather just before Christmas. Well, one day when Topsy's cat's-meat was brought, it was frozen quite hard, and felt as cold as ice. Topsy took it up in his mouth, but put it down again directly. He shook his head, and said, 'Skiff! skiff! skiff!' and it was very clear he did not like it at all. What do you think he did then? He considered for a moment, and then took one of the pieces in his mouth and carried it over to the fire, he put it down on the hot fender for a minute, and then ate it up. When it was finished, he went for the second piece, and then for the third, both of which he warmed at the fire in the same manner. Wasn't that clever of him? I think you will not be surprised to hear that we are all very fond of our cat, and not a little proud of him, for all I have told you is true."

A Fortune Made by a Wooden Hat.

In the year 1826 a poor journeyman turner, named Muhle, in worn-out shoes, through which his bare toes projected, with a knapsack on his weary back, arrived at a little village not far from Colmar, in Alsace. In this village was an engine-factory, in which our workman had come to look for employment. But the poor fellow's ragged, miserable appearance did not tell in his favor, and the master of the factory at once sent him about his business. Our journeyman turned away, and sadly and despondently went out at the door. But he had scarcely placed his hat on his head, when from the office within he heard the voice of the master calling him back. He returned to the factory, and the proprietor asked him—"What, in the name of wonder, is that kind of hat which you wear?"—"It is my own, and turned out of wood!"—"What! a wooden hat? I must examine it a little closer. Where did you buy it?"—"I did not buy it, I made it myself."—"Indeed! how and where, then?"—"On the turning-lathe."—"But your hat is oval, and on the turning-lathe things are made round. Some one else must have done that for you, you could not have made that hat."—"Yes, it is as I say," replied the poor journeyman. "I turned that hat myself."—"And how have you made it? you must be a wonderfully clever fellow to make an oval hat on a turning-lathe."—"I moved the central point, and then turned as it suited me. As I have to walk long distances, and can not afford to buy an umbrella, I made a hat which would serve me instead."—The manufacturer was struck, for he saw that poor Muhle had by himself discovered a difficult problem in the art of turning, which in the mechanics of the present day has become of such great importance. He recognized the immense value of the discovery, and at once took the poor fellow into his employ. He soon found out that Muhle was not only a very clever workman and turner, but a real genius too, who only required further instruction and guidance. And so it turned out. Muhle entered the business, in due time he became a partner, and after the manufacturer's death he was sole proprietor. At his death he left a fortune of millions. His wooden hat had been the first cause, and his clever head the cause of his success.

Why is the Sea Salt?

Miss Lottie, (who, as many older folks do, forgot to say where she lives), asks the Doctor a question which he finds it rather difficult to answer. "Why is the sea salt?"—To tell the whole story about the sea so that boys and girls would understand it, would be a pretty hard matter, and it would take a book rather than an article in the Boys' and Girls' Columns. We should have to talk about salt deposits, and go back to the very childhood of the world as it were. You know that the water of the sea is salt, because you can taste it, but you do not know that the water that runs out of the earth, such as most spring and well water, is salt, because there is so very little in it that you do not taste it. If you place a very clean and bright saucer full of well water in a warm place, such as on the back of the stove, and wait until it has all dried away—evaporated, or gone off in vapor, is the better word—and the saucer is quite dry, you will see that it will not be bright as at first, but that the water left something there—a very little, but enough to make the saucer look dim. If the saucer, without washing it, be filled again, and again, until several saucerfuls have been evaporated, you can at least get enough of the matter that is left to taste, and you will find it tastes salt and bitter, showing that salt and some other things are in well and spring water. Chemists have a much surer way of showing this, but we will not talk about that now. Now instead of the sea, the great ocean, let us consider a smaller body of water, such as many lakes in the basins of the far west, the Great Salt Lake for instance, which is where it receives all the streams of a wide extent of country, but has no outlet. All the rain that falls for thousands of square miles, soaking into the earth comes out again in places as springs, or washing the surface runs down the mountain sides and forms streams, into which waters from the springs run, and finally get to the lowest point, the lake. When this water, no salter perhaps than your well water, reaches the lake, it can get out only as the water got out of your saucer by evaporation, but just as in your saucer, the salt and other matters that have been washed out of the earth, do not evaporate. This lake for ages and ages has been receiving water, but getting rid of it only by evaporation, and now there is in the lake water which is many times salter than that of the ocean. I have seen in the country south of Salt Lake, smaller lakes formed in the basin-like valleys where they get the water from all the mountains around, and in a dry season these would dry up, and the bed of the lake look like snow, the salt being left after the water had evaporated, sometimes so thick that it can be shoveled up, and this is the way people in that country get their salt. If the evaporation of water containing the merest trifle of salt can make a large lake like the Great Salt Lake, so very strong with salt, as to be almost like brine, we can see that a great deal of the saltness of the ocean may have been carried into it from the land, and that this is one of the reasons why the sea is salt.

Aunt Sue's Puzzle-Box.

ANAGRAMS OF FAMOUS BATTLES.

1. Storm or moan.
2. Ah! at morn.
3. Poles boast.
4. Once dull.
5. He'll rub kin.
6. I trust zeal.
7. Rifle soon.
8. No pews, C. BUNN.

NUMERICAL ENIGMAS.

1. With seven letters spell a welcome word,
   To youthful ears, by them most gladly heard,
   "A word in season," this describes it well,
   It almost shows the kernel through the shell;
   My seventh, fifth and third, and sixth and fourth,
   Soon calls a strong and mighty being forth;
   My fourth and third and first and second name
   What scholars like much less than pleasant game.
   HENRY.
2. I am composed of 16 letters:
   My 1, 2, 11, 10, is a wild animal; sometimes tamed.
   My 6, 5, 15, 12, 2, is one of the United States.
   My 14, 7, 8, 13, is a bond of union.
   My 9, 7, 3, is a propeller.
   My 4, 5, 6, is pleasant to eat but uncomfortable to get into.
   My 1, 7, 16, is a receptacle.
   My whole was a noted man who died in the year 1790. GEO. H. FULLER.

PI.

Myoneco si het yesa arich fo dol ega.

SQUARE WORDS.

1.—1. A girl's name. 2. A prognostic. 3. To restrain. 4. A girl's name,

2.—1. A cape. 2. A state. 3. A cleft. 4. Observation. H. J. K.

CROSS WORD.

My first is in Xenophon but not in king,
My next is in preach but not in sing,
My third is in milk but not in butter,
My fourth is in growl but not in mutter,
My fifth is in bawl but not in cry,
My sixth is in bind but not in tie,
My seventh is in white but not in black,
My eighth is in nail but not in tack,
My ninth is in copy but not in book,
My tenth is in sought but not in took.
My eleventh is in pity but not in love,
My twelfth is in hat but not in glove;
These letters if taken and placed right
A well-known city will bring to light. CLAUDIA.

CHARADE.

My first in music finds a place,
A sign to all who play with grace,
That when their gaze upon it falls,
For repetition then it calls.

My second, one who tidings brought
To those who long a Saviour sought;
Tidings of joy and Christian peace
To sinners struggling for release.

Complete a man of world-wide fame,
Of noble rank and honored name,
A mighty prince, a statesman bold,
Whose mind vast plans of empire hold. HENRY.

DECAPITATIONS.

1. Behead that which shines and pleases
   And leave what often teases.
2. Behead a *gage d'amour*,
   And leave what gave it power.
3. The little maiden wore it,
   The cruel thing that tore it.
4. I'm harder, far, than slag,
   I'm soft as any rag.

DOUBLE ACROSTIC.

The initials name a tropical plant, and the finals a garden flower.

1. A man's name. 2. A girl's name. 3. An animal. 4. A river of England. 5. A city of New York. 6. Subsoil. ITALIAN BOY.

MORE FRIGHTENED THAN HURT.— *Drawn and Engraved for the American Agriculturist.*

HIDDEN GAMES.

1. Harry threw his top out of the window. 2. Here, Tom, run with these boot-jacks to Nesbit Hall's store. 3. If you want to see a Ruta-baga, tell Enos to bring you one. 4. I know it was George Delmar, bless the dear boy. 5. Good, good! O Min, O Essie and Kate, come quickly and see this. A. SAVINNE.

TRANSPOSED APHORISM.

Clem crams tomatoes far.

ANSWERS TO PUZZLES IN THE JUNE NUMBER.

ANAGRAMS.—1. Authorities. 2. Skirmishes. 3. Drawback. 4. Substratum. 5. Significance. 6. Brotherhood. 7. Aeronauts. 8. Importance. 9. Apprehension. 10. Departure.

CHARADE.—Orange. ("Or," the French for gold; "ange," angel.)

CONCEALED SQUARE WORD.—E V E N
V A N E
E N D S
N E S T

CROSS-WORD.—1. Napoleon. 2. Captain Paul Pennock.

NUMERICAL ENIGMA.—1. Alberta Clara Smith. 2. Denmark.

DOUBLE ACROSTIC.—E— e —L Evangeline.
Longfellow. V— et —O
A—utum—N
N—amin—G
G— rle —F
E— yri —E
L— ega —L
I— nfide—L
N— eb —O
E— sche —W

AUTHORS.—1. Gore. 2. Juvenal (Juvenile). 3. Lever. 4. Smiles. 5. Motley. 6. Mill.

ALPHABETICAL ARITHMETIC.—107)942265(8815. (*Key:* Oh nice Park.

PUZZLE.—MIMIC.

PI.—Rewards and punishments are the basis of good government.

Send communications intended for Aunt Sue to Box 111, *P. O., Brooklyn, N. Y.*, and *not* to 245 Broadway.

Well, Miss, you were not brought up in the country, or you would not be so frightened at that poor thing. If you once get through the gate and reach the house in safety, we can guess what a story you will tell so soon as you can get breath.—"What is the matter, my child? You are all out of breath."—"Oh, mother! let us go home; such a horrid monster, and all loose too! Something like an elephant, but not *quite* so big, but just such thick legs and round back.—No, it didn't have any trunk, but its neck was, oh! so long, and such eyes.—I shall be afraid to go away from the house again. Do let us go home, there are no such awful creatures in the city."—Just then Cousin Charley called "Lucy, Lucy, look here. I've found one for you. I've been looking for one ever since you have been here, and here is a real prime one."—Lucy went down, and Charley, as he placed the "one" on the grass, was much astonished to hear a scream, and a cry of "Mother, here it is!" and to see Lucy rush for the house.—"Well now, if city girls don't beat all, that girl is afraid of a Box-turkle, as if that would ever hurt anybody. Come here, Lucy, it won't hurt you."—By this time, Lucy seeing her cousin handle the "monster," found it was nothing like as large as her fears had made it, and behaved more sensibly.—"There," said Charley, with pride, "did you over see a handsomer turkle than that. I found it just t'other side of the gate, and you shall have it all for your own to take home with you."—"Now, Charley, don't say 'turkle,' didn't I read in the geography that they were *turtles*, and people in Florida caught them when they came ashore from the sea, and sold them to make turtle. *not* '*turkle*' soup."—"Well, I know turkle isn't right, but all the boys say so and its hard to get out of the way of it, but you havn't read as much about turtles as I have, or you would know there were sea-turtles, (whoppers those are,) fresh-water turtles, (some of them are snappers, I tell you), and land-turtles. In some countries, away off, the land turtles get big enough to carry a man, but here they are only about as big as a pint bowl."—"But you called it a box-turtle just now."—"So I did, and that's what it is, just see on the under side, most turk—turtles, have this lower shell all in one piece, but this has got a hinge or jinte to it."—"Charley, joint, not '*jinte*.'"—"Now see this *joint* lets it shut up the shell; he has only to pull in head, tail, and legs, shut up shop, and there he is."—"It is very curious, but what should I do with it if I took it home?"—"Do? just nothing but let it run in the yard. Why Uncle George, who used to live in the city, had one in his yard years and years. It burrowed in the ground every fall, and came out every spring. Uncle said that he could always tell when it was going to rain by the way "Tudy" walked around and stretched out his neck. And the worms and things that Tudy ate, whew!"—"Tudy's a queer name for a turtle."—"Uncle is one of those men who have names for everything. He knows all the bugs and things by name—why, Lucy, do you know that even the grasses and weeds have got names—and such names—worse than Archipelago. He said this turtle was *Cistudo Virginica*, but this was too long for every-day use, and so they called him Tudy."—"What shall I feed it on?"—"Nothing, he'll feed himself in your back yard. I don't know how many years they live, but they have been found with the date cut on the shell—oh, ever so long ago."—"But maybe mother won't let me take it home."—Her mother came along just in time to hear this, and said: "Yes, my child, take it, because Charley has been so thoughtful as to catch it for you, and I hope it may live in our city yard for many years, to remind you of your foolish fright, and to teach you to always look at a thing before you run from it, and to remind you of the day when your silly fears made a harmless little turtle seem a terrible monster."

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B. F. RANDELL'S
Grain Separator,
CLEANER and GRADER.

THE ATTENTION of the Farmers is respectfully called to B. F. Randell's justly celebrated Improved Fanning Mill, Seed Cleaner, Grain Separator and Grader combined, a recent invention which has attracted very marked attention throughout the Central and Western States, where it has been introduced, and which is now being manufactured for the EASTERN States, at Auburn, N. Y., and Harrisburg, Pa., as below.

Until the invention of the "Randell Grain Separator" all machines for cleaning grain known as "Separators," have been at the best mere SEED CLEANERS, too expensive for general use and altogether too slow, complicated and impracticable for the general purposes of a fanning mill. Therefore, for the information of those who are looking for something cheap, rapid and practicable, the undersigned respectfully submit the following extracts from testimonials of farmers and grain men to the merits of the Randell Improved Seed and Grain Cleaner or Separator and Grader.

FROM THE WELL-KNOWN FARMER, ALFRED HALE, OF LYONS, N. Y.

"This 26th day of May, I tested the RANDELL SEPARATOR in my Granary, and it proved to have important advantages over the present Fanning Mills; so much so that I gave my order for one, notwithstanding I have at this time two of the other mills. ALFRED HALE."

"It is the only real Separator, Cleaner and Grader in the United States.

"It works upon the principle of GRAVITY, an entirely NEW PRINCIPLE in grading grain, which gives the farmer perfect control of Cleaning, Separating or Grading his grain, and works to perfection.
JOHN HOFFER, Paxton Mills, Harrisburg, Pa."

FROM FARMER MURDOCK, AUBURN, N. Y.

"The Randell Separator is the first and only machine I ever saw that could separate OATS from BARLEY, or SPRING WHEAT, with any kind of expedition. It is not a mere fanning mill, nor a mere seed separator for cleaning Timothy or Clover, or fitting grain for seed, but both, combining the rapidity of the fanning mill with the perfection of a separator. A. R. MURDOCK."

"The Randell Separator is constructed upon an entirely new principle of taking advantage of gravity, whereby the farmer is enabled to separate Oats from Wheat or Barley rapidly for market, and at the same time get a grade of the soundest and heaviest kernels, pure of Oats and Cockle for seed.
ORLANDO LEWIS, Stone Mills.
NEYHART & CO., Empire Mills.
SERVIS & CO., Premium Mills."

Some time during this season each grain county will be canvassed by competent salesmen, who will exhibit the working of the machine and take orders for next fall's delivery. To avoid any mistake, remember the name of B. F. Randell will always appear on the drum of his "Separator."

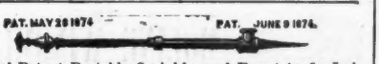
☞ Be sure and read editorial in the COUNTRY GENTLEMAN of May 13th.

Agents wanted for all the counties in the State.—Price $36 delivered on cars, and liberal discounts to agents.

We think it but the strictest justice to YOURSELVES, that we ask you to withhold your purchase of other mills, till after you have first seen and tested for yourselves this wonderfully RAPID, SIMPLE and COMPLETE MACHINE.

For Circulars, for the State of N. Y., address the Randell Grain Separator Co., **Auburn, N. Y.**

For the States of Pennsylvania, Maryland, Delaware, and New Jersey, address Randell Grain Separator Co., **Harrisburg, Pa.**



Jenks' Patent Portable Sprinkler and Fountain, for Irrigating and Ornamenting Lawns, Gardens, Flower and Strawberry Beds, Vineyards, Nurseries, etc. It is held erect or at any angle desired by the spindle, as well on hill-side or terrace as on level land. The water, in passing the nozzle, is broken into spray, and is ejected in a circle, in drops *like the gentlest rain.* It can be adapted to limited space. Under 125 feet of pressure, it will cover a surface of *forty feet in diameter, with great uniformity.* As a *Fountain* it can be used with a variety of jets.
Price, $5; with two extra pieces, for fancy jets, $6.
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Bogardus's Patent Universal Eccentric Mills

for Grinding Bones, Pot Shells, Ores, Old Crucibles, Fire Clay, Guanos, Oil Cake, Feed, Corn and Cob, Tobacco, Snuff, Sugar, Salts, Roots, Spices, Coffee, Cocoanut, Tomatoes, Saw-dust, Flax Seed, Asbestos, Mica, Horn, etc., and whatever cannot be ground by other Mills. Also for Paints, Printers' Inks, Paste, Blacking, etc.
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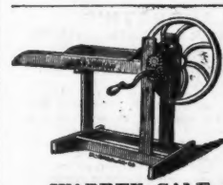

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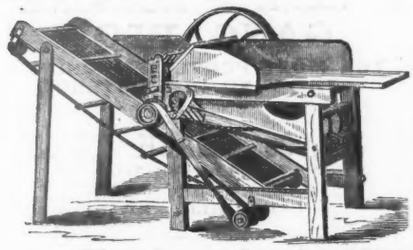

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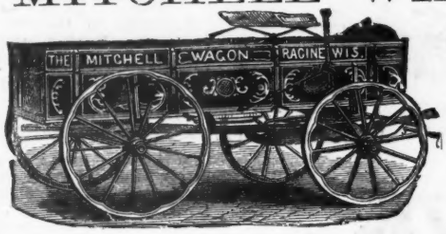

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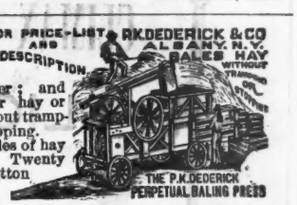
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SCREWS, PRESSES, GRINDERS, Etc.

Depot for the sale of the above Mills, in New York City,
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Send for Circular. **H. B. GRIFFING.**

THE FARMERS FAVORITE Cider & Wine Mill
FOR 1875,

With the new and improved hopper, is the best, most perfect, and simplest mill made. The sales of 1874 demonstrated that this mill is the best in use; it does not slice the fruit and leave it in hard lumps, like most mills, it thoroughly crushes and grates it, so that every cell is broken and a fine pomace produced, hence we get more juice from the same amount of fruit than any other mill.

We manufacture 3 sizes, and warrant every mill.

Send for a descriptive circular with cuts.

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And for sale at our Branch Offices:
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Price, complete, ready for use:	*Barrels.*	*Price.*
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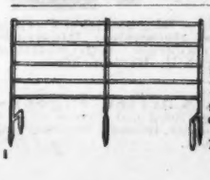

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Can be set up with ease—is an absolute protection against cattle—is ornamental, and practically indestructible. Is superior to every other form of enclosure.

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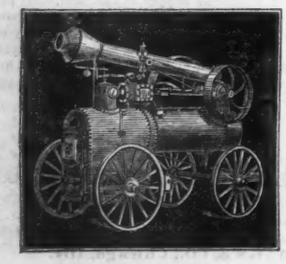

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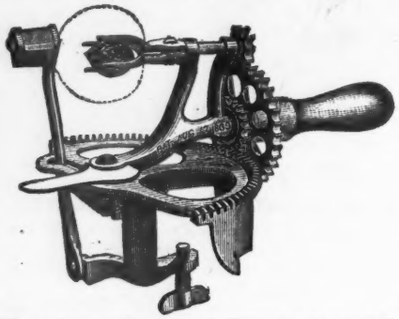

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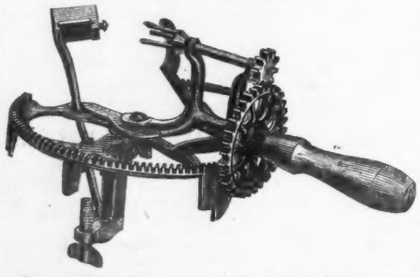

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"If this should go to Mr. Henderson, I would say that I believe the gardeners of this country would gladly hail another edition of 'Gardening for Profit;' at least, I thank him for that little work. Through its influence I left a paying manufacturing business and began to follow its teachings. This was three years ago. Now I have a market garden of thirty acres and 400 four-feet sash, and enjoy myself as I never did before. Again I thank him."

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containing a great variety of Items, including many good Hints and Suggestions which we throw into smaller type and condensed form, for want of space elsewhere.

Continued from p. 291.

Self-Opening Gate.—"M. M.," Chattahoochee, Fla. We do not know of any manufacturer of any automatic gate, nor do we know of any such gate that is of practical use; the difficulty of keeping them in working order being too much for the patience of the owners. A really serviceable gate of this kind would be very desirable.

Cahoon's Broadcast Sower.—"S. H. J.," Colfax Co., New Mexico. We cannot vouch for the truth of the representations made by the engravings of the Cahoon's Broadcast Sower, as to the vigorous and effective scattering of the seed, but we do know it to be a good machine for sowing seed broadcast, and that it does its work better and more quickly than hand sowing.

To Remove Mildew.—"Mrs. A. G.," Louisville, Ky. Chloride of lime water will remove mildew from cotton cloth or linen. A large teaspoonful of the fresh chloride is stirred into a quart of water and strained. The cloth is dipped in the solution, and laid in the sunlight for a few minutes; if this is not effective, the dipping should be repeated. This will not injure the cloth, if sufficiently weak, and the cloth is well rinsed in clear water, as soon as the spots are discharged.

Cement or Plank Floors.—"C. H. C., Owatonna, Minn. The relative cost of cement and plank floors are as follows. One barrel of cement, three barrels of sand, and seven barrels of coarse gravel or broken stone will lay 25 cubic feet of concrete, or 75 square feet of stable floor, four inches thick. At $4 per bbl. for the cement, the cost of cement alone would be $52 for a floor of about 1000 square feet, or for a stable of 40x25 feet. If plank can be procured for $16 a thousand feet, b. m., the same floor will cost for this material only $32. The labor of laying a cement floor is many times greater than that of laying a plank floor, and if it is not skillfully done, it will not last so long. You will doubtless choose the plank floor.

Plymouth Rocks.—"Enquirer," Detroit, Mich. Some varieties of Plymouth Rocks have the legs slightly feathered; this is not a sign of impurity of blood, but whether it is a disqualification for exhibition or not, we are unable to say. To breed out the leg feathers is probably a judicious course, so as to produce uniformity in the various strains. Chicks may be permanently marked by clipping off any one of the toe claws.

Megrims in Poultry.—"H. D. W.," Baltimore. When fowls are over-fed and have but little exercise, they sometimes become dull, sleepy, and stupid, staggering or moping about, or standing or sitting lazily with closed eyes. Water frequently drops from the mouth when thus affected. The cause is probably indigestion and inaction of the liver. The usual treatment is to give a tea-spoonful of castor oil daily, reduce the food, turn the fowls out and let them scratch, giving them morning and evening a few pills of bread and castile soap, with a pinch of cayenne pepper in each.

Home-Made Horse-Power.—"A. J. W.," Apsley, Ont. A substatial horse-power would need much iron work, the castings of which would cost more to make than the ready made machine could be purchased for. It would be better and cheaper to buy a good railroad horse-power than to attempt to make one.

Cattle at the International.—The Centennial Commission proposes to adopt a scale to regulate the respective numbers of each breed of neat or horned cattle to be entered for competition. It is assumed that seven hundred (700) head will cover all desirable entries; and upon that basis will be calculated the number of stalls which will be apportioned each breed. The scale divides the aggregate number into ten parts, and of these, four-tenths ($^4/_{10}$) are assigned to Short-horns, two-tenths ($^2/_{10}$) to Channel Islands, one-tenth ($^1/_{10}$) to Devons, one-tenth ($^1/_{10}$) to Holsteins, one-tenth ($^1/_{10}$) to Ayrshires, and one-tenth ($^1/_{10}$) to animals of other pure breeds. The exhibition in each breed will comprehend animals of various ages, as well as of both sexes. Draft and fat cattle will be admitted irrespective of breed. The exhibition of horned cattle will open September 20th, 1876, and continue fifteen days. It is desirable that all

persons who contemplate exhibiting, will make application for stalls without delay, and if necessary at a later day, such applications can be amended. Inquiries may be addressed to the Chief of the Bureau of Agriculture, International Exhibition, Philadelphia.

"Walks and Talks" Correspondence.

PASTURING PIGS.—"G. C.," Va., asks: "Do you give your pigs the run of a pasture, or do you keep them penned all the time?"—I give my breeding stock as much exercise as possible, winter and summer. In the summer all the breeding stock over nine months or a year old, have nothing but pasture and water. In warm weather they remain in the field night and day. I kept forty breeding sows last summer and fall in summer before in an old pasture which has not been plowed for eight years. There is a little white clover in it, but the pasture consists principally of the common grasses. There are a few acres of woodland attached to it, and a living spring of water. These sows had nothing but this pasture for four or five months. If any of the sows get very thin from suckling, or from any other cause, we let them run with the younger pigs. These are in a better pasture, and fed twice a day besides.

"DO YOU RING THE PIGS?"—Yes. But if I had pasture that I was going to plow, I would let them root all they wished, and have a good time generally.

OATS AND PEAS.—"When labor is scarce and land cheap, would it not be a good plan," asks G. C., "to sow oats and peas together in May, and turn the hogs in when ripe"?—I think not. I cut this crop with a Johnston reaper, and the straw alone, if it is a luxuriant crop, well cured, is worth two or three times the cost of harvesting and thrashing.

DIEHL WHEAT. "N. P. T." sowed half a bushel of Diehl wheat on 64 rods of land in the fall of 1873. "I got," he says, "13 bushels and 37½ lbs. of splendid wheat."—This is 34 bushels per acre. He sowed six acres of it this fall. In this section many of our farmers have abandoned the Diehl and gone into Clawson. There seems to be no reason to doubt but that the Clawson is a hardier variety, that will yield better under ordinary treatment than the Diehl. But I still hold on to the Diehl, thinking it of better quality.

SOWING TIMOTHY WITH MILLET.—"E. A. W.," Orland, Ind., writes: "Do you think it will do to sow timothy seed in the spring with millet. My clover froze out and the land has been cropped enough—too much—and I thought to sow millet and seed with timothy, pasturing the millet."—I have had no experience on this point. I should think the pasturing would injure the young timothy. If the land is a strong loam, I should be inclined to try summer-fallowing it and seeding it down heavily with timothy, say half a bushel per acre, in August or September. If you get the land in fine tilth, you will be likely to secure a good catch and obtain a large crop of hay the next season, and a fair meadow or pasture for years to come. If the land was sandy and clean, I would sow timothy and clover alone this spring, and as early as the land could be got in fair mellow condition. Sow a peck of timothy and a peck of red clover and two lbs. of white clover per acre. Go over the land two or three times with a fine harrow before sowing the seed. Then sow the seed, harrow lightly and roll. Everything will depend on getting the land in good order.

MANGEL WURZEL AT THE SOUTH.—"T. K.," Winona, Miss., writes: 1. "Do you think mangel wurzel will succeed here in the south?"—I should think you could grow a large crop, but probably not of the best quality, and the advantage of raising mangels in the south cannot be so great as here, where they are specially valuable in spring before grass starts. 2. "Give me your method of planting, cultivating, and saving the crop."—Plow in the fall, manure heavily in winter or spring with well-rotted manure. Harrow it repeatedly, so as to mix the manure with the soil. Plow the manure under. Harrow. In a week or two, if there is time, plow again, harrow, and roll. Drill in the seed at the rate of 6 or 8 lbs. per acre, in rows 2½ feet apart. Thin the plants to 12 or 15 inches in the row. Cultivate between the rows with a hand hoe, repeatedly. Go over the crop again with the hoe. Leave only one plant in a place and keep out all weeds. I sow in May, and harvest in October. Pit in the field, or put the roots in a cellar. You would probably not need to sow before July, and harvest just before severe frost. 3. "Which root do you think preferable for cows when milk is the object?"—Taking into consideration the cost of raising the amount of produce, and the care of keeping, I think there is no root equal to the mangel wurzel—certainly none superior. 4. "What would be a fair yield per acre on land that will produce 40 bushels of shelled corn per acre?"—They never ought to be sown on land which is not rich enough to produce 75 bushels of shelled corn per acre. I think land that is rich enough to grow 75 bushels of shelled corn, ought to produce 750 bushels of mangels per acre.

A GOOD CORN CROP.—F. K. Adams, Waukesha Co., Neb., writes me that his corn last year yielded 92¼ bushels per acre on 20 acres, and all hard. I suppose this means shelled corn or its equivalent. If so, it is a grand crop. Mr. A. cultivates his corn very thoroughly—doing it with a two-horse "Black Hawk" Cultivator, made at Rock Island, Ill. He recommends me to get one.

CANADA BARLEY.—"J. A. C." asks why Canada barley commands a higher price than N. Y. State barley. Because Canada farmers take more pains with the crop, and have secured a good reputation for their barley. We can raise just as good barley on the east side of the Niagara or St. Lawrence river as on the west side. There is little or no difference in soil or climate. We can raise good barley if we make our land clean, mellow, dry, and rich. It is vain to hope for a good crop on poor, half-worked, weedy, wet land. It requires the best of soil and culture.

HOW TO USE A ROLLER.—If it is a plank roller, saturate the planks with petroleum. It will not only preserve it, but the damp earth will not stick to it. Put a seat on to the roller, and let the boy ride. Let him go around the field, and keep going around, working towards the center. He will not only do more work, but do it better, as there is no danger of scraping up the soil, as is sometimes the case when you turn short at the ends. Keep the axles of the roller well oiled.

RANDALL'S GRAIN SEPARATOR, made at Auburn, N. Y., touches me on a weak spot. I have been accused of having "weeds on the brain." And there is some truth in the accusation. Weeds run away with half our profits. We are improving in our treatment of weeds, but we are still very remiss in one particular. We do not always sow clean seed. We summer-fallow a piece of land for wheat, and take pains to get every weed seed to germinate, and then kill the young weed plants. But we are not always able to get clean seed to sow upon it. On our own farm we often run our seed three or four times through a fanning mill, in hopes of blowing out every foul seed, and all of the lightest grain. But from a slight examination of Randall's Separator, we deem that with this machine the work can not only be done with far less time and labor, but we may be sure of getting nothing but the heaviest and best matured kernels for seed, with not a single weed seed in the sample. After harvest we shall probably have a better opportunity of testing this machine, but in the meantime we are sufficiently satisfied of its good merits, to recommend it to the consideration of our readers.

BUYING A FARM.—"F. H.," of Mass., writes: "If you were to purchase a farm again, where would you advise a person to go to buy, and how old had he ought to be before buying, and how many acres would you buy?"—This is somewhat mixed, but the meaning is clear. If I had to buy a farm again, I should certainly buy it in the United States—but what part of it would depend on circumstances. I should probably buy in the neighborhood where I happened to be. I have very little respect for people who are always longing to be anywhere, except where their lot and work is cast. I would advise "F. H." to buy a farm in Massachusetts. If he was in Iowa, I would advise him to buy one in Iowa. If he was in Missouri, I think he would be wise to stay there. In regard to age, much depends on experience. I was born on a farm, and my father taught me to do all kinds of farm-work, as soon as I was able. I think I could plow as well as I can now, when I was twelve years old. At sixteen I had a good deal to do with the general superintendence of the farm. At twenty-two I was left alone. Twenty-five years later I could see where I had made a great many mistakes, and could feel the force of a remark once made to me by an old friend. "The truth is," said he, "a man wants to live one life, before he knows how to live."—If "F. H." is a farmer's son, and thinks he knows how to manage a farm, and has the money to buy one, let him purchase in the neighborhood, and go to work with a good heart. "How many acres" he had better buy, will depend on his capital. I would not lock it all up in land. Leave enough to work it and stock it properly. Recollect that we do not make our money from *land*, but from the labor, skill, and money we put into it. Land gives us a chance or opportunity to work; and we get our money from the work. As to whether you had better spend the work on 5, 50, or 500 acres, depends on circumstances. If your farm is small, you must grow crops which require much labor and manure per acre.

BREEDING LONG-WOOL SHEEP.—"R. S. T.," who says he has never kept sheep, asks me several questions about long-wool sheep and their grades. I am not sure but he is quite as likely to succeed with them, as a farmer who has hitherto kept only Merinos. I have known many farmers who used to keep a flock of common Merinos, and let them pick up a living as best they could, fail entirely when they undertook to raise the long-wool mutton breeds. They made nothing by keeping Merinos, and they made still less by keeping long-wools. But to the questions.—1st. At what age should they be allowed to breed?"—As a rule, not until they are two years old. I have bred them at one year old with good success. For instance, a ewe-lamb that is born in February might be allowed to take the ram the following December.—2nd. "How old should the ewes be kept as breeders?"—In an ordinary flock I should not keep them after they were four or five years old. It is better to sell them to the butcher when fat, and breed from young ones. In raising choice, pure-bred sheep, breeders often keep good ewes as long as they will breed. I have a Mapleshade Cotswold ewe, "No. 70," 8 years old, that had three good lambs this spring, all now living and doing well. She is still in vigorous health, and weighed at shearing time this spring 178 lbs., and sheared 10¼ lbs. of wool.—3rd. "Would you have the lambs come early when the object is *not* to raise lambs for the butcher?"—If you have plenty of roots for the ewes, or can "slop" them with bran or malt-combs, and have dry, comfortable quarters, I should decidedly prefer to have the lambs come early, say February and March. You have then plenty of time to attend to them, and the fresh May and June pasture will keep up the flow of milk, and push forward the lambs.

SAWDUST FOR MANURE.—"G. W. C.," Illinois, asks if it "will pay to haul rotted sawdust five miles for manure?"—I should think not on your rich prairie soils. You can get or make manure cheaper.

NUTRIMENT IN PUMPKINS.—"J. C. C.," Huntington, Ind., writes: "I have several times fattened pigs on sweet pumpkins and corn. I threw out pumpkins and corn together. The pigs would eat all the corn they wanted, and would then eat twice the amount in bulk of pumpkins. They grew and fattened much better than when I fed corn alone. Now, do you suppose there is much nutriment in the pumpkins, or was the good effect due to the pumpkins keeping the stomach and intestines properly filled?"—Anything which will enable a good pig to eat and digest more food will induce a more rapid growth. In 100 lbs. of pumpkins there is 82½ lbs. of water. Green clover contains 75 per cent of water. If you were feeding 25 large hogs, and they ate 200 lbs. of corn-meal a day; and if you should mix water with it until it was as "sloppy" as green clover, you would have to make a mixture of 200 lbs. of corn-meal and 600 lbs. of water. Now if, instead of giving water, you give pumpkins, to get the same amount of food and water, you would have to give 700 lbs. of pumpkins and 147½ lbs. of corn-meal. It must not surprise any one, therefore, to see a lot of pigs, which had just had all the corn they would eat, make away with a good sized pumpkin each after every meal. The pumpkins furnish water and afford a little easily digested food. And when the pigs have all the corn they will eat, and all the pumpkins they will eat afterwards, I can easily see why they should grow and fatten faster than on corn and water alone.

"HOW OFTEN SHOULD PIGS BE FED?"—Young pigs could be fed five or six times a day to advantage—say the first thing in the morning; then as soon as you have done milking. As soon as you come home at noon feed again, and again before going to the lot in the afternoon. Then again when you come home to tea, and finally the last thing at night. The pen of five pigs under six months that I showed at the N. Y. State Fair last year were fed in this way. They were fed little at a time and often. They had a little corn-meal and fine middlings mixed with, and allowed to soak for several hours in, milk and slops from the house. The food was not cooked. The pigs were always ready to eat—never quite satisfied and never really hungry. They would always come running to the trough and eat up clean all that was given them.

SALT AS MANURE.—A Pennsylvania farmer wants to know if it will pay him to use salt at $1 50 to $2.00 per barrel for manure, and how he had better use it.—I have not much faith in salt, and yet it sometimes has a wonderful effect. For wheat sow a barrel per acre *broadcast*, and harrow it in thoroughly before drilling in the seed. Never drill in the salt with the seed. Several of my neighbors killed their seed corn this year by putting refuse Syracuse salt in the drills or hills.

STONE UNDERDRAINS.—"G. W. W.," Bedford Co., Pa., has plenty of stones on his farm, but cannot get tiles.—Use the stones for drains. Put stones on each side of the drain, and cover with a flat stone. If well laid, they will work well and last for many years. You cannot make a good *main* drain by throwing in stones or gravel promiscuously. With me an underdrain of this kind has never worked satisfactorily.

CROSSING COTSWOLDS WITH SOUTH DOWNS.—A gentleman in Pennsylvania has a pure bred South Down ram, and he proposes to buy some pure bred Cotswold ewes to breed to him.—My advice is "don't."—Better get good common grade ewes, that will not cost one-tenth what a pure bred Cotswold ought to be worth. Breed these to your pure bred South Down, and you will have nearly as good lambs as if you crossed him with pure bred Cots-

wolds. Do not buy Duchess Short-horn cows at $5,000 to $40,000 each to cross with a Devon bull. You will not get money enough from the milk, or calves, or beef, to make the operation profitable.

Garget or Inflammation of the Udder.—"C. E. G.," Pendleton, Ind. When the udder and teats of a cow, that has recently dropped a calf, are swollen, feverish, and lumpy in places, she has what is called the garget. The whole mass of the udder is affected more or less, and some of the milk channels become filled with coagulated milk, and sometimes pus. The inflammation should be reduced by cold water applications, and a dose of one pound of epsom salts, repeated in two days, if necessary. The milk should be drawn frequently, and if the teats are too tender to be handled, a milk-tube should be used. If the swollen and hard condition of the udder continues, it may be rubbed with iodine ointment twice a day, a good deal of gentle friction and pressing of the udder being used.

Death of Lexington.—This noted horse, the sire of a greater number of valuable horses than any other stallion in this country, is dead. He died at Woodburn Farm, Ky., at the age of more than 25 years. He was foaled in 1850, made and won his first race at Lexington, Ky., in 1853, and out of the seven starts which he made in his racing career, he was beaten but once. Since 1855 he has been reserved for the stud, first standing at the farm of W. F. Harper for two seasons, when he was sold by his owner, Mr. Ten Broeck, to R. A. Alexander, of Woodburn, for $15,000. He has stood at Woodburn since that time. Amongst his most noted progeny are Kentucky, Asteroid, Idlewild, Norfolk, Leatherlungs, Thunder, Arcola, Harry of the West, Daniel Boone, Jack Malone, Harry Bassett, Tom Bowling, Preakness, Joe Daniels, and Wanderer. No other horse in the world has left such a valuable offspring behind him, and it is somewhat remarkable that in his later years he sired the best of his sons. For some years he has been blind, but has rarely transmitted this defect to his colts.

Berkshire Swine Association.—The American Berkshire Swine Association has issued a circular, in which it is announced that pedigrees for entry in the first volume of the Record should be in the hands of the Secretary on the 1st of August, and that the volume is expected to be issued before the end of the year. A premium of $100 is also offered for the best approved essay upon the History, Breeding, and Management of Berkshire Swine; competing essays to be placed in the hands of the Secretary by September 1st, 1875. The awarding committee are Prof. J. K. Klippart, Columbus, Ohio, John P. Reynolds, Chicago, Ill., and Luther Tucker, Albany, N. Y. The address of the Secretary of the association is A. M. Garland, Springfield, Ill.

Protrusion of the Rectum in Fowls.—"E. R. H." This is caused by using too stimulating food, which relaxes the muscles, so that the lower part of the rectum is ejected along with the egg, as it passes through it from the oviduct. As hens subjected to this trouble are generally fat, it is best to promote them to the kitchen. We have found it always to return, notwithstanding all our treatment, which has consisted of injecting solutions of opium, using astringent washes, and giving one drop of tincture of aconite in a bread pill, each day for a week.

Value of a Cord of Muck.—"E. H. M." The value of a cord of muck is as undefinable as the value of a horse. It depends upon its quality. Some muck is wholly vegetable matter, and some has 40 to 50 per cent of sand in it. The vegetable matter, when fresh, contains 70 to 80 per cent of water, and when dry is of course increased in value. A cord of freshly dug muck, consisting wholly of vegetable matter, well decomposed, and that leaves only 2 to 3 per cent of ash when burned, may be worth a dollar a cord. When dug a year, it may be worth twice or thrice that sum. Generally we should estimate it at one-fourth the value of fresh stable manure.

Guaranty of Eggs.—"R. J. W." As we understand it, a poultry dealer who sells eggs and "guarantees" them, engages that they shall be the produce of pure bred fowls, fresh, in good condition, and properly fertilized; and all this he can by taking proper care to assure himself of. More than this no one can do, and if he does less, he is not an honest dealer. Occasionally with the best care, there may be eggs that will not hatch, and some loss in this respect must be expected.

A Case of Injudicious Feeding.—"N. F. M.," Glenwood, Va. "A horse ten years old, apparently in robust health, was fed upon corn-meal mixed with water, without hay or other fodder, for three days in warm weather, being worked during the time at heavy hauling. The third day, while still at work, the horse sickened and died in half an hour. What was the cause of death?"—It is impossible to answer this question satisfactorily, without knowing the previous condition of the horse's health, or making an examination. The feeding was decidedly wrong and dangerous, and would undoubtedly have led to trouble sooner or later. It is probable that death was caused by the injudicious feeding; such improper feeding being sufficient to produce disease and death under the circumstances.

Sheep for Kansas.—"G. E. W.," Marion Co., Kansas. The most profitable kind of sheep for your locality, would undoubtedly be the common native ewes, which can be purchased for $2.50 a head, and to cross them with pure Merino rams. These would give in three years a three-quarter bred wool, which is in demand at every woolen factory in the country. Long wool sheep and their grades are not suitable where small flocks are kept, and where mutton is not the main object. This class of wool can not be used in ordinary mills, but only for fabrics of combed and not carded wool, and it is often difficult to sell the wool for a fair price, unless in quantities large enough to ship to eastern markets.

Government Land.—"W. E. S.," New York. For information about United States land in any part of the country, write to the Commissioner of Public Lands, Washington, D. C.

Wild Garlic.—"C. J.," Rockbridge Co., Va. There is no surer method of destroying wild onion or garlic than summer-fallowing. This plant is very tenacious of life, and as the ground is repeatedly plowed or harrowed, the roots, which are brought to the surface, should be gathered and burned. One of the most frequent causes of the spread of this weed is the sowing of wheat which is mixed with it; another is using screenings from grist-mills or fanning-mills for poultry feed. If clean seed only be sown, and all the screenings be ground before they are used, there would be much less garlic grown. It is useless to kill it by summer-fallows, if the ground is re-sown with foul seed, or through the use of foul manure.

A Breachy Colt.—"J. E. N.," Pike Co., Pa. To prevent a breachy colt from jumping over fences, it should be made to wear a "yoke." This consists of a bent hickory stick, something like an oxbow, which is put around the neck; to the bottom of this is affixed a short piece of scantling, in which a stout pin one foot long is inserted. The pin projects forwards, and when the colt attempts to jump, the pin catches in the rails of the fence, and holds him down.

To Destroy Musk-Rats.—"L. L.," Boston. Musk-rats are very fond of apples. If apples are cut in slices and scored with a pen-knife, and arsenic rubbed into the score marks, the rats will eat the bait, and may be destroyed in large numbers. The baits must not be placed too thickly, or the rats will carry them off and store them up in their holes, instead of eating them at once, but should be laid out at night and left during the day, if they are not disturbed, until they are all killed off.

Stock for the Dairy.—"E. B. M.," Warren Co., Ohio. For a small butter dairy, the Alderney, Jersey, or Guernsey cows are most suitable. These are all regarded as different breeds, but yet they are very much alike in their valuable butter-producing qualities. For a milk dairy where the cows are to be sold for beef after they are no longer profitable to milk, there are no cows that surpass good grade or pure Short-horns from milking families. It is not well, as a general thing, to divide one's business into butter-making and beef producing. But if it is to be done, we would choose the Shorn-horn first for the two purposes combined, and the Devon next.

Gapes in Chickens.—"Mrs. C. W. M.," Greene Co., N. Y., writes that she has found gapes may be prevented from troubling chickens, by keeping the chickens in a warm, dry, clean place, and feeding them with corn-meal wetted and mixed rather plentifully with ground red or black pepper.

Composting Hen Manure.—"Enquirer," Washington Co., Ohio. The droppings of poultry cannot be improved by mixture with any other materials, but can be essentially injured. When kept dry, and reduced to fine powder, it may be used exactly as guano is used, and is worth nearly as much. It cannot be drilled very easily unless it be sifted, because it can not be completely brought to a fine powder, and the drill becomes choked. If wood ashes or lime are to be applied, they had better be sown broadcast after the wheat is sown, but neither of them should be mixed with poultry droppings. One barrel of the droppings per acre, would give the wheat a good start, but they can not be depended on alone to make a good crop.

Fodder Crops.—The late and dry season has left many farmers short of pasture, and with a poor prospect for fodder for next winter. To make up the deficiency, late crops may be sown up to the 10th of July, or a few days later. Millet and Hungarian grass, if sown in July, will bring a good crop of hay, but it must be cut while in blossom, or it will be poor feed. Ruta bagas may be sown up to the 12th inst, and white turnips up to the 5th of August. Corn-fodder should be sown in rows 30 inches apart, very thickly, and fertilized with some fine manure. Turnips may be sown on an oat stubble. Grow some fodder crops by all means.

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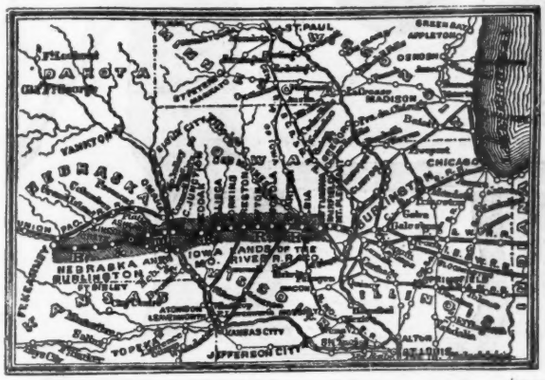

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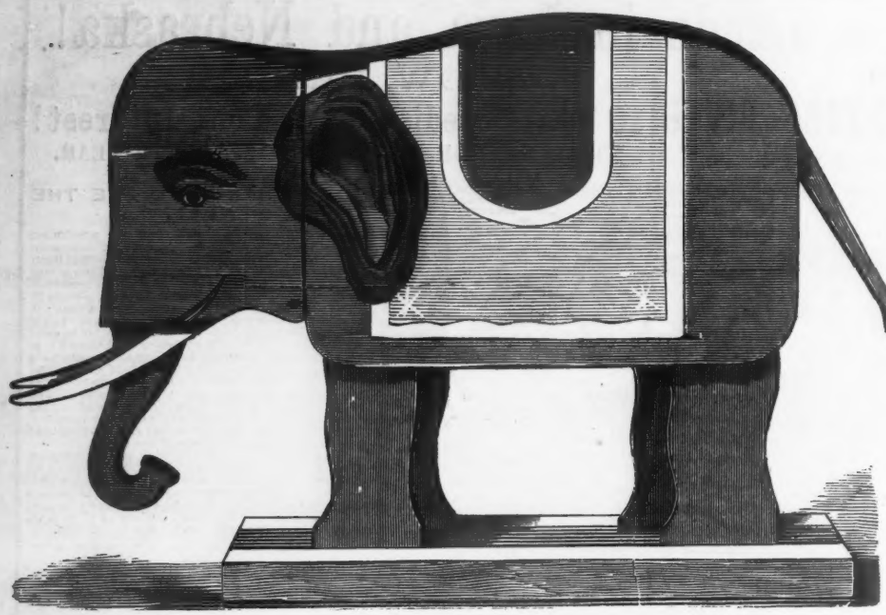

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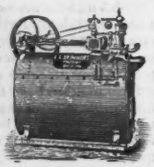

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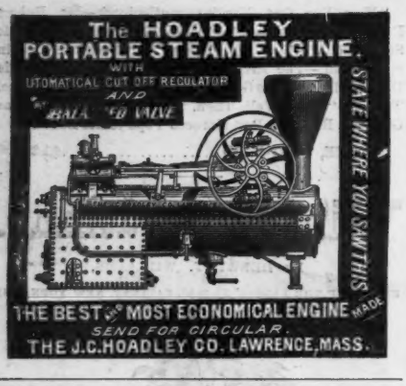

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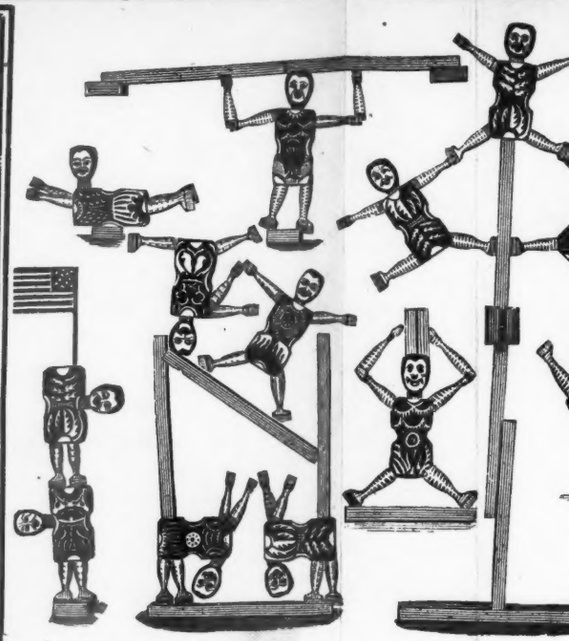

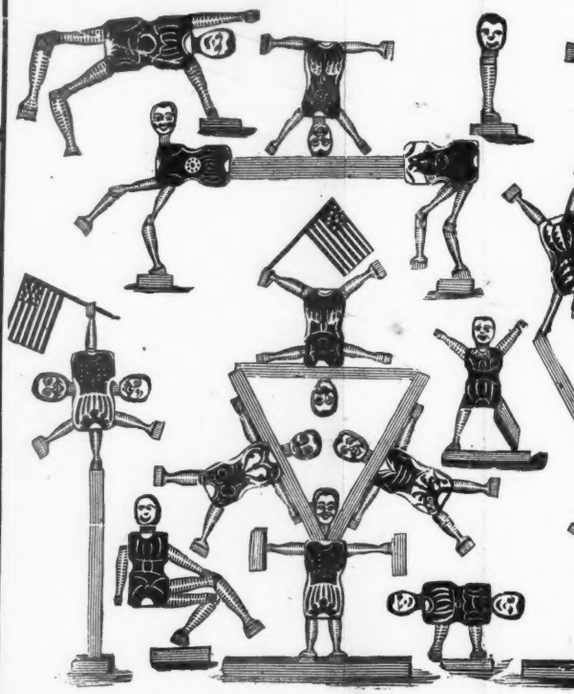

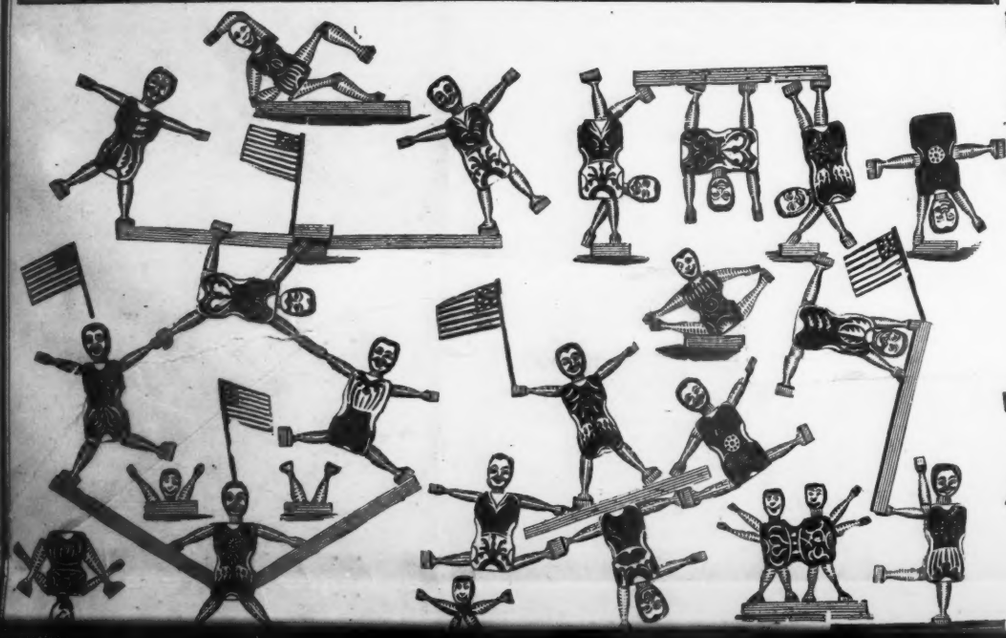
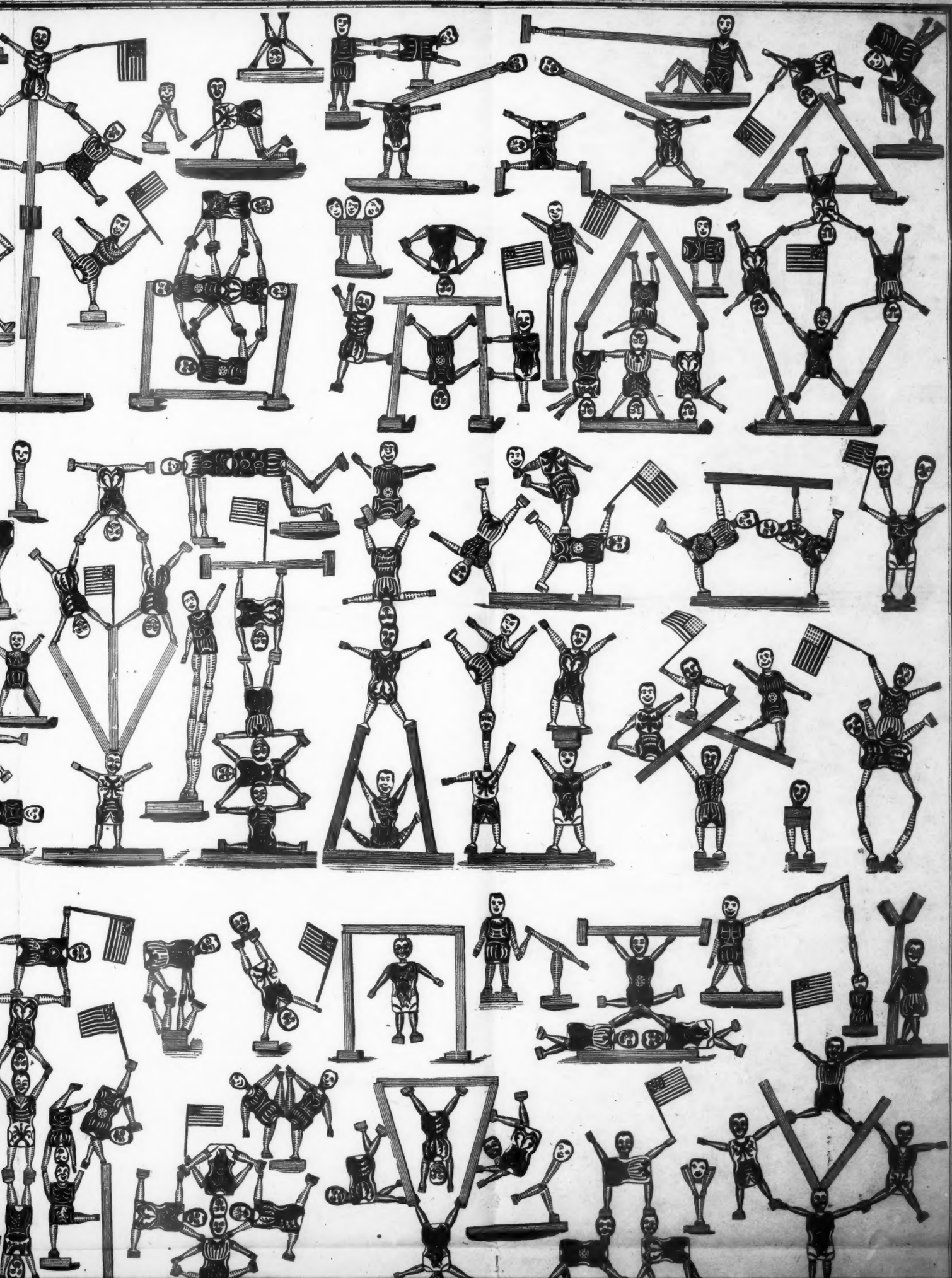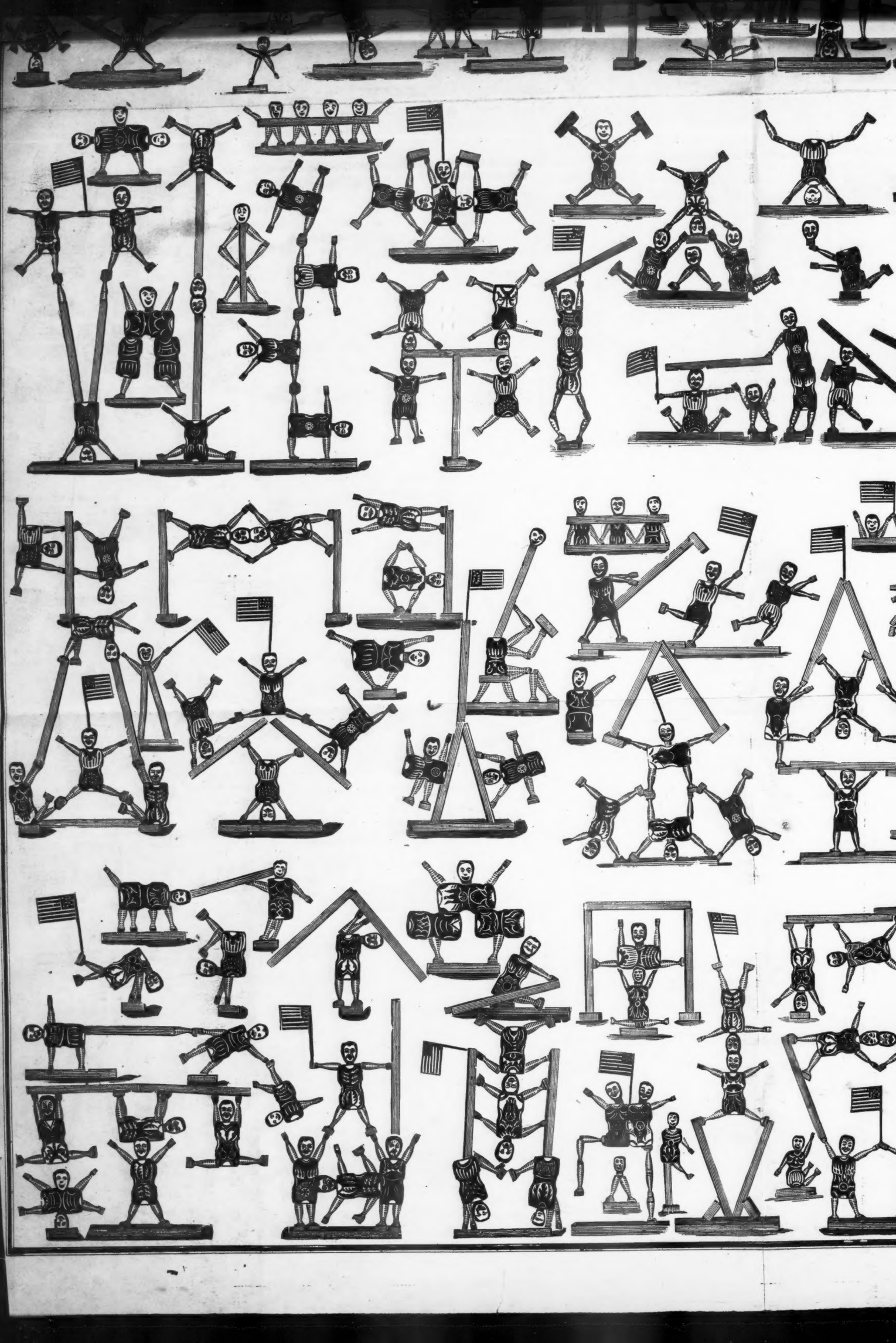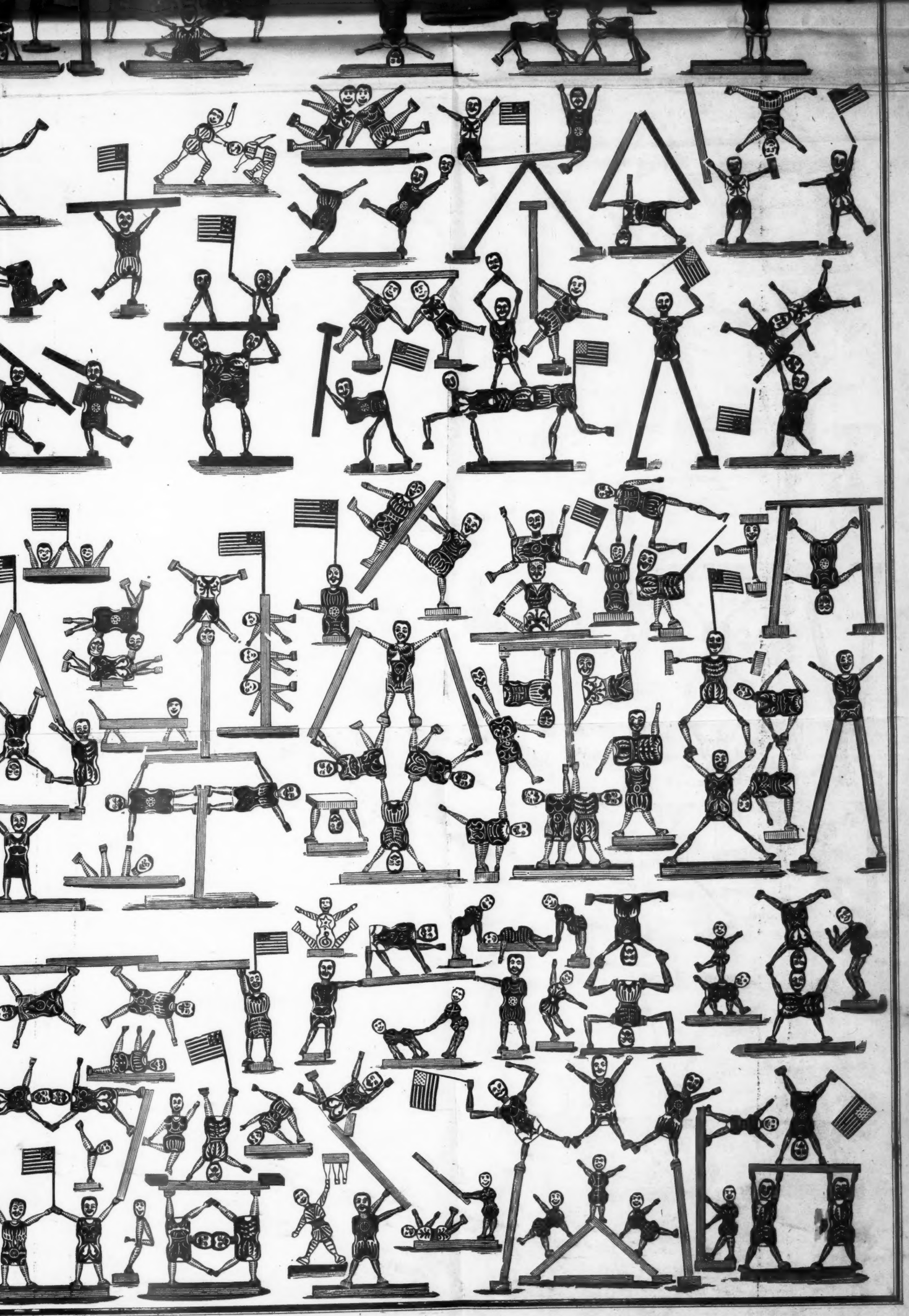
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